22500388069

BRITISH MEDICAL
Library
ASSOCIATION

INTERNATIONAL

MEDICAL MAGAZINE

A MONTHLY, DEVOTED TO

MEDICAL AND SURGICAL SCIENCE.

(FROM JANUARY TO JUNE, 1893,)

EDITED BY

JUDSON DALAND, M.D.,

INSTRUCTOR IN CLINICAL MEDICINE AND LECTURER ON PHYSICAL DIAGNOSIS AND SYMPTOMATOLOGY IN THE UNIVERSITY OF PENNSYLVANIA; ASSISTANT PHYSICIAN TO THE UNIVERSITY HOSPITAL; PHYSICIAN TO THE PHILADELPHIA HOSPITAL AND TO THE RUSH HOSPITAL FOR CONSUMPTIVES, PHILADELPHIA.

(FROM JUNE, 1893, TO JANUARY, 1894,)

EDITED BY

JOSEPH P. TUNIS, A.B., M.D.,

ASSISTANT DEMONSTRATOR OF SURGERY IN THE UNIVERSITY OF PENNSYLVANIA; VISITING SURGEON TO THE DISPENSARIES OF THE PRESBYTERIAN AND METHODIST EPISCOPAL HOSPITALS, PHILADELPHIA.

VOL. II.

PHILADELPHIA:

J. B. LIPPINCOTT COMPANY.

1894.

Copyright, 1894, by J. B. Lippincott Company.

WELLCOME INSTITUTE LIBRARY
Coll. WelMOmec
Coll.
No.

Printed by J. B. Lippincott Company, Philadelphia.

BRITISH MEDICAL Library ASSOCIATION

INTERNATIONAL MEDICAL MAGAZINE.

CONTRIBUTORS TO VOL. II.

ABERCROMBIE, JOHN, M.D., F.R.C.P., London, England.
ADLER, LEWIS H., JR., M.D. Philadelphia, Pa.
ALLEN, A. R., M.D., Carlisle, Pennsylvania.
ANDERS, JAMES M., M.D., Philadelphia, Pa.
ASHHURST, JOHN, JR., M.D., Philadelphia, Pa.
ASHMEAD, ALBERT S., M.D., New York City, N. Y.
BARHAM, CUTHBERT R., M.D., Pittsburg, Pa.
BARTOW, BERNARD, M.D., Buffalo, N. Y.
BEHRENS, B. M., M.D., Chicago, Ill.
BELL, A. N., A.M., M.D., Brooklyn, N. Y.
BELL, ROBERT, M.D., Glasgow, Scotland.
BISHOP, SETH SCOTT, M.D., Chicago, Ill.
BLEYER, J. MOUNT, M.D., New York City, N. Y.
BONDURANT, E. D., M.D., Tuscaloosa, Alabama.
BOURGES, H., M.D., Paris, France.
BOWEN, CUTHBERT, A.M., M.D., Barbadoes, W. I.
BOYD, STANLEY, M.B., B.S., F.R.C.S., London, England.
BOYLAN, J. E., M.D., Cincinnati, Ohio.
BRIDGE, NORMAN, M.D., Los Angeles, California.
BROWER, DANIEL R., M.D., Chicago, Ill.
CARPENTER, JOHN T., JR., M.D., Philadelphia, Pa.
CARR, J. WALTER, M.D., Chelsea, England.
CARTER, J. M. G., M.D., Sc.D., Ph.D., Waukegan, Ill.
CARY, CHARLES, M.D , Buffalo, N. Y.
CATTELL, HENRY W., A.M., M.D., Philadelphia, Pa.
CORDIER, A. H., M.D., Kansas City, Missouri.
CROTHERS, T. D., M.D., Hartford, Conn.
CURRIER, ANDREW F., M.D., New York City, N. Y.
CUTTER, EPHRAIM, M.D., New York City, N. Y.
DABNEY, WILLIAM C., M.D., Virginia.
DETWILER, B. H., M.D., Williamsport, Pa.
DUNDORE, CLAUDE A., M.D., Philadelphia, Pa.
EDWARDS, WILLIAM A., M.D., San Diego, California.
ELLIOT, J. W., M.D., Boston, Mass.
ESKRIDGE, J T., M.D., Denver, Colorado.
EVE, PAUL F , M.D., Nashville, Tenn.
FARNHAM, A. E., M.D., Fairfield, Maine.
FORD, WILLIS E., M.D., Utica, N. Y.
FOSHAY, P. MAX, M.S., M.D., Cleveland, Ohio.
FRANKLIN, G. H., M.D., Hightstown, N. J.
FREEMAN, S. D., M.D., Smethport, Pa.
GIBNEY, V. P., M.D., New York City, N. Y.
GILLESPIE, A. LOCKHART, M.D., F.R.C.P. Ed., Edinburgh, Scotland.
GLEASON, E. B., M.D., Philadelphia, Pa.
GOWERS, W. R., M.D., F.R.S., London, England.
GRAHAM, D. W., M.D., Chicago, Ill.
GUYON, FÉLIX, M.D., Paris, France.
HEKTOEN, LUDVIG, M.D., Chicago, Ill.
HEROLD, JUSTIN, A.M., M.D., New York City, N. Y.
HERSMAN, C. F., M.D., St. Louis, Missouri.
HINSDALE, GUY, M.D., Philadelphia, Pa.
HOLDER, A. B., M.D., Memphis, Tenn.
HUCHARD, HENRI, M.D., Paris, France.
INGALS, E. FLETCHER, A.M., M.D., Chicago, Ill.
JACKSON, A. REEVES, A.M., M.D., Chicago, Ill.
JENCKES, H. L., M.D., Galena, Illinois.
KEATING, JOHN M., M.D., LL.D., Colorado Springs, Colorado.
KELLY, A. O. J., M.D., Philadelphia, Pa.
KIERNAN, JAMES G., M.D., Chicago Ill.

KING, CLARENCE, M.D., Machias, N. Y.
LINN, THOMAS, M.D., Nice, France.
LOOMIS, ALFRED L., M.D., LL.D., New York City, N. Y.
LOPEZ, HENRIQUE, M.D., Havana, Cuba.
LYDSTON, G. FRANK, M.D., Chicago, Ill.
LYMAN, HENRY N., M.D., Chicago, Ill.
MANLEY, J. H., M.D., New York City, N. Y.
MANN, MATTHEW D., M.D., Buffalo, N. Y.
MCFARLAND, JOSEPH, M.D., Philadelphia, Pa.
MILLIKIN, B. L., M.D., Cleveland, Ohio.
MONTGOMERY, E. E., M.D., Philadelphia, Pa.
MONTGOMERY, W. T., M.D., Chicago, Ill.
MURRAY, H. MONTAGUE, M.D., F.R.C.P., London, England.
NEWCOMB, JAMES E., M.D., New York City, N. Y.
NOBLE, CHARLES P., M.D., Philadelphia, Pa.
OHMANN-DUMESNIL, A. H., M.D., St. Louis, Mo.
PARK, ROSWELL, M.D., Buffalo, N. Y.
PARKHILL, CLAYTON, M.D., Denver, Colorado.
PERKINS, C. E., M.D., Sandusky, Ohio.
POTAIN, PROFESSOR, M.D., Paris, France.
POTTS, B.H., M.D., Philadelphia, Pa.
PULS, A. J., M.D., Milwaukee, Wis.
REED, R. HARVEY, M.D., Mansfield, Ohio.
REESE, D. MEREDITH, M.D., Baltimore, Md.
RENDU, H., M.D., Paris, France.
ROCKWELL, A. D., M.D., New York City, N. Y.
RUEDI, CARL, M.D., Denver, Colorado.
SHEILD, A. MARMADUKE, M.B. (Cantab.), F.R.C.S., London, England.
SHOEMAKER, GEORGE ERETY, M.D., Philadelphia, Pa.
SIMONS, T. GRANGE, M.D., Charleston, S. C.
SLIGH, JAMES M., M.D., Granite, Montana.
SMITH, ALLEN J., M.D., Texas.
SPENCER, H. N., A.M., M.D., St. Louis, Mo.
STELWAGON, HENRY W., M.D., Ph.D., Philadelphia, Pa.
STOCKTON, CHARLES G., M.D., Buffalo, N. Y.
TAYLOR, JAMES, M.A., M.D. Edin., M.R.C.P. London, England.
THOMAS, J. D., M.D., Pittsburg, Pa.
THOMPSON, J. E., M.B., B.S. Lond., F.R.C.S. Eng., Texas.
TUNIS, JOSEPH P., A.B., M.D., Philadelphia, Pa.
TYSON, JAMES, M.D., Philadelphia, Pa.
WELLS, EDWARD T., M.D., Chicago, Ill.
WITTAKER, JAMES T., M.D., Cincinnati, Ohio.
WIBLE, E. E., M.D., Homestead, Pa.
WILSON, H. AUGUSTUS, M.D., Philadelphia, Pa.
WIRT, WILLIAM E., M.D., Cleveland, Ohio.
WRAY, HENRY RUSSELL, Colorado Springs, Colorado.

INTERNATIONAL
MEDICAL MAGAZINE.

Vol. II.] FEBRUARY, 1893. [No. 1.

ORIGINAL COMMUNICATIONS.

THE PRIMARY OR ESSENTIAL ANÆMIAS.

BY JAMES TYSON, M.D.,

Professor of Clinical Medicine in the University of Pennsylvania, and Physician to the Hospital of the University.

THE results of the application of staining methods to the study of the blood by Ehrlich and his pupils, supplemented by the more recent studies of Von Jaksch, Löwit, Limbeck, Müller, Rieder, and others, have already modified to some extent our views as to the constitution of the blood in various diseases, and it is probable there there will be further changes. It seems, however, not an inappropriate time to review the conditions constituting the anæmias and the management which modern clinical experience has determined to be most successful, even though it may involve a repetition of some existing knowledge.

The broadest definition of anæmia—impoverished blood—is correct, but, more definitely, it is any state of the blood in which there is a diminution in its total bulk, its hæmoglobin, its albumen, or the latter two. The first is the condition which ensues from a large hemorrhage of any kind, as from the bursting of an aneurism, erosion of a blood-vessel in an ulcer of the stomach or in a tuberculous lung, as well as from traumatism. In all of these instances, however, where the hemorrhage is not fatal, the original bulk of the blood is rapidly restored by the absorption of water and salts from the tissues, while the hæmoglobin and albumen remain deficient. The hæmoglobin in blood may be diminished by a reduction in the total number of red corpuscles, or in the proportion of coloring-matter in each corpuscle.

Anæmias are further divided into *primary* or *essential* and *secondary* anæmias. The former are the direct result of a defect in the blood-making apparatus, while secondary anæmias are those resulting from the loss of blood, or some one of its important constituents, or of a defective supply of blood-making material.

Among primary anæmias are commonly included chlorosis, pernicious anæmia, leucocythæmia, lymphatic anæmia or Hodgkin's disease, and splenic anæmia. It is not conceded by all observers that pernicious anæmia is the result of a defect in blood-making. By some, as Quincke and Hunter, it is regarded as a hæmolysis or disintegration of the red blood-corpuscles in the circulation or certain parts of it, especially in the liver. While admitting that the facts adduced by Hunter, and more recently by Griffith and Burr, favor such a view, the evidence to me is not sufficiently conclusive to demand its transfer from the essential anæmias.

The secondary anæmias are numerous, including those due to hemorrhages, the action of poisons on the blood,—the toxanæmias,—viz., lead-poisoning, uræmia, drains of various kinds on the economy, inadequate food, and defects in the digestive apparatus. The present paper will be confined to the consideration of the primary or essential anæmias.

I.—CHLOROSIS.

Blood Changes.—At once one of the easiest recognized yet least distinctive of the anæmias in its morbid anatomy, chlorosis scarcely admits of a definition. A disease of overworked young women occurring most commonly at the age of completing sexual development, sixteen to twenty years, the most marked and constant change in the blood is a reduction in the hæmoglobin, associated with a moderate *oligocythæmia* or diminution in the red blood-corpuscles. The hæmoglobin value of each corpuscle is therefore reduced. Certain cases are, however, reported in which the eruthrocytes have been as low as one million one hundred and ninety thousand to the cubic millimetre. It is, moreover, true that the number is always somewhat below the normal, the maximum in one of fifteen cases observed by Limbeck being three million six hundred thousand, the normal for women being four million five hundred thousand. The hæmoglobin I have found as low as fifteen per cent., but such a fall is extreme. This disproportionate fall in the hæmoglobin, while not invariable, remains, however, a tolerably constant feature, producing sometimes a recognizable paleness of color when the blood is seen *en masse*.

Along with the lowering of hæmoglobin, as would be expected, since it is a constituent of the hæmoglobin, the iron of the blood falls. An increase of alkalescence, announced by Græber[1] as a constant symptom, has not been found by Kraus[2] in his more exact methods of testing.

---

[1] Zur klin. Diagnostik d. Blutkrankheiten. Leipzic, 1888.

[2] Zeitschrift f. Heilkunde, Bd. ii.

As to remaining changes, the red corpuscles may be altered in shape to a moderate extent, constituting a small degree of *poikilocytosis*, or they may be larger than in health, when they are known as *megalocytes*. But even the slighter degrees of these conditions are not constant. More frequent is an undue reduction in size of the corpuscles,—a *microcytosis*. A very slight degree of *leucocytosis* may be rarely present, while the *blood-plaques* in severe cases may also be increased.

Morbid Anatomy.—Other than the changes in the blood there is no essential morbid anatomy to chlorosis. Many years ago Virchow pointed out an imperfect development of the circulatory apparatus as more or less characteristic,—that the heart was small, the aorta and its larger branches poorly developed and thin-walled. Such a state of affairs, when present, is probably an accidental coincidence. There is no enlargement of the spleen or lymphatics.

Symptoms.—While the blood-alterations in chlorosis are scarcely distinctive enough to be considered diagnostic, the symptoms are quite the reverse. The patient is invariably a girl, generally between sixteen and twenty, who, although she may have been overworked, does not seem badly nourished; certainly she is not emaciated. She is, however, characterized by a peculiar pallor, often exhibiting a yellowish-green tinge, which is especially marked on the mucous membranes, and is responsible for one of the names of the affection, green sickness. She is extremely weak, especially on exertion, and short of breath. She is subject to vertigo, palpitation of the heart, and even irregularity of the heart's action. Physical examination will sometimes discover functional cardiac murmurs. Rarely a compensatory hypertrophy of the left ventricle has been noted, but never valvular disease. Epigastric pain is also a symptom at times.

Diagnosis.—The diagnosis is based chiefly upon the age and sex of the patient, the peculiar greenish-yellow color, the paleness of the lips, and the decidedly diminished hæmoglobin, unaccompanied, as a rule, with a proportionate reduction in the number of eruthrocytes, although these are always somewhat diminished, and sometimes extremely so. The same lost normal ratio between the hæmoglobin and the corpuscles is also a characteristic of lead-poisoning, which has, however, superadded its own characteristic symptoms, and is almost restricted to adult males.

The epigastric pain mentioned as occurring in chlorosis resembles that more common in ulcer of the stomach. The anæmia which so constantly attends ulcer of the stomach, often in a high degree, is, however, different from that of chlorosis, there being a corresponding decline in the eruthrocytes and their coloring matter.

A not infrequent error of diagnosis in connection with chlorosis is the mistaking it for a "decline," a pulmonary consumption, which it resembles in the pallor, the feebleness, and shortness of breath of the patient. The absence of cough and of the physical signs of consumption will aid in a diagnosis between the two conditions.

Prognosis.—The prognosis is nearly always favorable when the disease is recognized and the proper treatment afforded. There are few results more satisfactory in therapeutics than those of a properly-treated case of chlorosis. Time is, however, required, and too rapid a cure must not be promised, several months to a year being usually required. The question whether a chlorosis will be transformed into that more serious variety of anæmia known as pernicious anæmia has been raised. This seems not impossible. Both are failures in the cytogenetic apparatus to produce a proper cellular blood. In the one, chlorosis, the coloring-matter is chiefly wanting, although associated with this is usually found a less degree of cell-defect. In pernicious anæmia both cells and coloring-matter are defective. Both embarrass the oxygen-carrying office of the blood, and thus interfere with important vital processes, the total suspension of which must be fatal.

Treatment.—The treatment is pre-eminently by iron, and it matters not very much what preparation is used. The carbonate of iron, in the shape of Blaud's pill, made by a double decomposition between the carbonate of potassium and the sulphate of iron, is at this day very popular, one to three being given at a dose three times a day. But the tincture of the chloride of iron or reduced iron or one of the vegetable salts may be given. Iron is given in too large doses in the majority of cases for which it is prescribed. Most of it is unabsorbed, and therefore wasted; nay, worse, that which is unabsorbed locks up the intestinal secretions by its astringency, produces headache, and makes the patient otherwise uncomfortable. But chlorosis is one of the few diseases in which large doses of iron are well borne. The reason is plain. It is the iron-holding constituent of the blood which is wanting, and the iron is needed to replace it. The blood is, as it were, hungry for it. Next to iron comes arsenic. The efficiency of iron is greatly aided by union with arsenic, which should be given in increasing doses, but short of toxic effect.

But to give these drugs is not alone sufficient. Rest in bed, at first continuous, is imperative to secure a rapid result, and this must be associated with an abundance of good food. Daily massage, except during menstruation, is also a useful adjuvant. There is no condition in which the so-called "rest cure" is more efficient than in chlorosis. With a return of color to the lips, or, better, with the growing increase in the hæmoglobin as measured by the hæmoglobinometer, the patient should be permitted to be out of bed at first a half-hour to an hour only, but this should be gradually increased until she is up most of the day. For a long time, however, fatigue should be avoided. To those who can afford it a residence at the sea-side materially aids convalescence. Indeed, I know of no condition so rapidly improved at the proper time by sea-air as chlorosis. To the poor a well-regulated hospital treatment is a boon for which there is scarcely a substitute.

II.—PROGRESSIVE PERNICIOUS ANÆMIA.

A second variety of essential anæmia is *pernicious* or idiopathic anæmia, originally described by Addison in 1855, in his celebrated paper on "Diseases

of the Supra-Renal Capsules." Biermer again drew attention to the subject in 1868, and since then numerous others have studied it anatomically and clinically. It is, however, still the least understood of all the anæmias. Fortunately, it is a rare disease.

Etiology.—The etiology of pernicious anæmia is almost unknown. The pregnant state seems to be responsible for a certain number of cases of true pernicious anæmia, the first of which were described by Channing and Gusserow. Other causes are cited, such as atrophy of the stomach, but I prefer to include under pernicious anæmia what Addison has characterized as a "general anæmia, occurring without any discoverable cause whatever, —cases in which there had been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous, or malignant disease." It can be best explained as a primary defective hæmogenesis, although some, led by Quincke, ascribe the state of the blood to a hæmolysis, in proof of which they point to the enormous accumulation of iron in the liver noted by Quincke in 1876, and confirmed by Rosenstein in 1877. To these Hunter added a pathological increase of the urobilin in the urine. In a recent noteworthy paper Griffith and Burr take the same view.[1]

The disease affects mostly those beyond middle age, but children also have it, and Griffith mentions ten cases occurring under twelve. It is also more frequent in males.

Symptoms.—The symptoms of pernicious anæmia are most insidious, and begin with a gradual progressive weakness. What is first interpreted as a causeless weariness or languor grows slowly into an extreme debility with faintness on the slightest exertion, and thence into a state of thorough muscular weakness, which ultimately prostrates the patient, rendering him unable to rise from bed. To this succeeds a mental hebetude and state of general torpor. Yet there is no emaciation. The body-bulk is well preserved. The skin acquires gradually a yellowish hue, and sometimes an actual jaundice, whence, in connection with the symptoms, the disease has been mistaken for the slower form of yellow atrophy of the liver. In fact, the jaundice is similarly caused. It is a hæmatogenous jaundice, although it has also been ascribed to defective action of the liver-cells due to the accumulation of pigment in them. The mucous membranes, on the other hand, are blanched, as may be noted in the lips, gums, and mouth.

Cardiovascular symptoms are especially conspicuous in progressive pernicious anæmia. Hæmic murmurs, visibly pulsating and throbbing arteries, even pulsating veins, have been noticed. The large but soft jerky pulse was mentioned by Addison. The capillary pulse is also frequently seen, and hemorrhages, cutaneous and retinal, occur.

Digestive derangements also form a part of the symptomatology of per-

---

[1] Pathology of Pernicious Anæmia, Transactions of the Association of American Physicians, vol. vi., 1891.

nicious anæmia. Indisposition to take food, nausea, vomiting, and diarrhœa are troublesome symptoms. Moderate elevation of temperature, irregular and intermittent, is also noted, while nervous symptoms, including numbness, languor, and even paralysis, sometimes occur.

The urine exhibits no constant changes, being sometimes pale and sometimes dark-hued. The dark color is ascribed by Mott and Hunter to an excess of urobilin.

Blood Changes.—The changes in the blood are more distinctive than in chlorosis, although it is true also that there is no single constant characteristic feature. The most constant is, however, a very decided oligocythæmia unaccompanied by a proportionate reduction in the hæmoglobin, although the hæmoglobin, as a whole, may still be less than in health. On the other hand, it is sometimes increased. Quincke found as few as one hundred and forty-three thousand corpuscles in a cubic millimetre of blood, while it is not uncommon to find them less than half a million. Frederick P. Henry found three hundred and fifteen thousand a few hours before death, and Laache three hundred and sixty thousand.

The inevitable conclusion from such a state of affairs is that either the hæmoglobin value of each corpuscle must be increased or there is a hæmoglobinæmia which has its seat in the plasma. This latter view Silbermann[1] has adopted, because he has been able to produce in animals by the administration of blood-corpuscle dissolving substances, as pyrogallol, a complex of symptoms like those of pernicious anæmia. If pernicious anæmia be a hæmolysis, as held by Hunter, rather than a defective hæmatogenesis, we would expect such a hæmoglobinæmia to result.

A further striking peculiarity in the blood of pernicious anæmia is the increase in the size of the red corpuscles. They become megalocytes, from ten to fifteen micro-millimetres in diameter, as compared with a normal of from six and five-tenths to nine and four-tenths. The majority may be so enlarged. On the other hand, there are also microcytes and poikilocytes, characterized by great irregularity in shape, being crescentic, conical, and otherwise distorted. While these irregular shapes were first demonstrated in connection with pernicious anæmia, and although they are more or less characteristic, cases of the disease have been described by Grainger Stewart, Lepine, and Hermann Müller in which poikilocytosis was absent.

There are also sometimes found in the blood numerous minute highly-colored spherical bodies, called Eichhorst's corpuscles. Eichhorst regarded them as pathognomonic, but they, too, are sometimes absent. When present they contribute to the hæmoglobin in the blood, but as they are not included in the blood-count they get no credit for their effect. The relative excess of the hæmoglobin may, in a measure, be thus accounted for. Nucleated *red* corpuscles are a constant constituent of the blood of pernicious anæmia, and have also been regarded by their discoverer, Ehrlich, as almost distinctive.

---

[1] Berliner Klinische Wochenschrift, 1886, page 472.

Two kinds are found: first, the small normal-sized corpuscle with its deeply-stained nucleus, and certain large forms with pale nuclei. Blood-plaques, according to Osler, are either absent or very scanty. Leucocytes are usually slightly diminished in number, while there is a tendency to an increase of the mononuclear white cells as compared with health.

F. P. Henry[1] has called attention to a fact which, while it does not aid us in the solution of the problem of pernicious anæmia, is interesting and deserves to be mentioned. He says that in this disease the red corpuscles "approach those of the lower animals in many, if not all, of their chief characteristics, namely, in their number, their size, their shape, and the amount of hæmoglobin they carry."

Morbid Anatomy.—Various tissues have been studied in the effort to find a morbid anatomy for pernicious anæmia. In the absence of lymphatic or splenic enlargement, the marrow of bones has claimed close study. H. C. Wood described the red condition of the marrow of long bones in 1871. In October, 1875, William Pepper[2] described changes in the medulla of the sternum and radius from a case of pernicious anæmia, consisting, first, of a paleness as compared with health, and, second, in being made up for the most part of pale granular cells with single nuclei. Just a year later, Cohnheim[3] described changes in the medulla, characterized by the absence of fat-cells, by the presence of colorless cells of epithelial habitus and of various sizes very closely resembling lymph-cells, and containing one and two nuclei, a few multinuclear giant cells, and a very few blood-corpuscles holding marrow-cells. There was about an equal proportion of colored elements, among which the biconcave red discs were in a decided minority. More numerous were the spherical non-nucleated corpuscles of different sizes, while most numerous were the red nucleated cells.

In 1877 Pepper and the writer published a note in Virchow's Archiv[4] containing the results of the study by the latter of the marrow from the shaft of a femur from a case of pernicious anæmia. This marrow resembled a fresh blood-clot in appearance, but on examination was found to be made up of about equal proportions of red blood-discs and of granular cells of epithelioid character, for the most part larger than white blood-cells, but otherwise similar. The largest were one one-thousandth of an inch (.0254 millimetre) in diameter, the smallest one three-thousandth of an inch (.0084 millimetre). Most of these contained a single comparatively large nucleus. A few contained two nuclei. Some contained granular fat particles, while others were completely filled with granular fat (compound granule-cells), but there were no true adipose vesicles.

---

[1] Anæmia, Philadelphia, 1887.

[2] Progressive Pernicious Anæmia, American Journal of the Medical Sciences, October, 1875.

[3] Virchow's Archiv, October, 1876.

[4] Die Betheiligung des Knockenmarkes bei Perniciöser Anæmia, Virchow's Archiv, 1877, lxxi. 118–126.

About the same time I also examined the medulla from a clavicle and radius sent from Montreal by William Osler. The mass was dark red and diffluent, being slightly decomposed. There was a relatively small number of red corpuscles, but a very large number of granular cells resembling colorless blood-corpuscles, but of larger average size, ranging from $\frac{1}{3000}$ inch (.0084 millimetre) to $\frac{1}{1500}$ inch (.016 millimetre). While many of them were nucleated and epithelioid, containing one, two, and rarely even more nuclei, in many no nuclei could be brought out even by aid of acetic acid. In addition to these two sets of cells were a number of nucleated colored cells, usually $\frac{1}{1500}$ inch (.016 millimetre) in diameter and oval in shape, containing from two to five nuclei. These were presumably the red nucleated cells described by Cohnheim. Finally there were found free oil-globules, compound granular cells, fat crystals doubtless from decomposition, and undetermined granular matter probably from the same source.

These reports do not differ essentially, and, although the appearances described are not identical, they are sufficiently constant to justify their association as more than accidental. Summed up they amount to this: marrow dark-red, consistence less soft, fat-vesicles absent, specific cellular elements increased, numerous nucleated red corpuscles present.

The deposition of iron in the liver-cells has already been alluded to. It is found in the outer and middle zones of the lobules, and in two specimens examined by Osler was so distributed as to outline the bile capillaries. The iron is in like manner sometimes increased in the kidney, but not in the spleen, but these organs are not otherwise essentially changed.

The heart-muscle is fatty, while the other muscles are unusually red. Other morbid changes are described, but they cannot be regarded as essential. Such are changes in the ganglion-cells of the sympathetic, and sclerosis of the posterior columns of the cord. Osler and Henry describe a complete atrophy of the secreting tubules of the stomach in one case. But I should not regard this as a case of pernicious anæmia, but rather one of anæmia secondary to the atrophy of the gastric tubules, whereby the preparation of a suitable blood-making material is interfered with.

Diagnosis.—The diagnosis of pernicious anæmia may be uncertain at first, but its true nature soon declares itself. The intense anæmia, extreme weakness, digestive derangements, and cardio-vascular symptoms, in connection with a blood-count of two million or below, with a corresponding hæmoglobinæmia, and an admixture of megalocytes, microcytes, and poikelocytes, point to a condition scarcely mistakable.

Prognosis.—The prognosis is to-day regarded as less unfavorable than a few years ago, since recent experience has developed the fact that temporary improvement is not uncommon, and it is said that recovery sometimes takes place. Still, Addison's original prognosis, of a termination sooner or later fatal, is not often a wrong one.

Treatment.—Treatment of this form of anæmia is, however, not fruitless. The same measures which are almost a specific for chlorosis are not without

effect in pernicious anæmia. Accordingly arsenic, to a less degree iron, good food, and favorable hygienic surroundings are to be adopted. The arsenic treatment has been followed by results which justify the words "temporary cure," and it is said that permanent cure has followed. Such temporary cures have covered a period of three years. The best preparation appears to be Fowler's solution in gradually increasing doses, until twenty and even thirty minims are reached, and this three times a day. The drug thus administered is wonderfully well borne, nausea and vomiting being rare. Rest in bed is indispensable, but may be supplemented with massage. Food should be in easily assimilable shape, such as beef-juice, beef-peptonoids, and peptonized milk.

Transfusion of blood and of milk, which seemed at one time to give promise of favorable results, have been discontinued.

III.—LEUKÆMIA.

The third of the essential anæmias is *leucocythæmia*, or *leukæmia*, the former of these words meaning white-cell blood, the latter simply white blood. From the etymological and histological stand-point, leucocythæmia, suggested by Hughes-Bennett, is the more accurate term, but, as the German mind leads the medical thought of the day, Virchow's term leukæmia has become the more usual one.

The extremely rapid course of certain cases of leukæmia justifies its division into an acute and a chronic form. An instance of the former was a fatal case reported by Ebstein, in which the whole course of the disease, including a prodromal stage, was but six weeks. Similar cases are reported. The duration of the chronic form may extend over years. Leukæmic women have had multiple pregnancies and have borne children at term.[1]

Etiology.—Nothing definite is known of the cause of leukæmia. It occurs in all countries, in both sexes, and at all ages, although more common in middle life and more frequent in males. The eighth week and seventieth year have found cases. It is sometimes hereditary. Malaria has been assigned as a cause, and certainly its association with this disease has been seemingly more than accidentally frequent. To a less degree this is true of syphilis. It is said to have followed a blow or injury, and to have been found in the lower animals.

Morbid Anatomy.—Leukæmia has a definite morbid anatomy, consisting in alterations in the blood and in the hæmogenic apparatus, including the spleen, the lympathic glands, and the marrow of bones, and it is called accordingly splenic, lymphatic, myelogenic, while a compound word, as splenic-myelogenous, is used when two of these agents are at fault.

The splenic changes exhibit three stages in their development. In the first the spleen is simply hyperæmic, soft, and swollen even to the extent of

---

[1] See cases reported by J. Chalmers Cameron and Saenger, Sajous' Annual for 1891, E.

rupture. The Malpighian bodies share in the hyperæmia and may be slightly enlarged, but are overshadowed by the swollen pulp. In the second stage hyperplastic changes make their appearance in the Malpighian bodies, and as these grow the pulp is intruded upon. They may reach such size as to be recognized by the naked eye as spherical gray nodules one to three lines in diameter, or they may be elongated, or forked, following the course of the blood-vessels. The third stage furnishes the granitic spleen, in which white dots are separated by dark streaks representing the destroyed pulp, pigmented by the disintegrated blood. The spleen is now hard and is cut with resistance. Its size may be enormous and the organ weigh from two to eighteen pounds.

The lymphatic enlargement is a true hyperplasia. Not only do the glands enlarge, but new foci of lymphatic tissue appear in various organs, as the liver and kidneys. These are also said to be simple extravasations of leukæmic blood from the capillaries. All the more prominent groups may share in the enlargement,—the cervical, axillary, inguinal, and perineal glands. The individual glands remain, however, soft. The lymphatic follicles in the tonsils and in the tongue, pharynx, and mouth may enlarge. This is also occasionally the case with the solitary glands of the intestine and the agminated glands of Peyer.

In myelogenic leukæmia the marrow-changes may be described in a word as reversion to the embryonal type of medullary tissue. The fat of the adult marrow has disappeared, and a mass of lymph-cells mingled with nucleated red corpuscles in all stages of development takes its place. The lymph-cells include numerous large mononuclear cells in the act of division by karyokinesis, multinuclear leucocytes, and a few mononuclear cells. There are also numerous marrow cells, including both eosinophiles and myelocytes like those found in the blood.

The liver is often enlarged, and, according to Von Jaksch,[1] *pari passu* with the spleen, and it has this further peculiarity, that its edges are rounded, while in what he describes as *pseudoleukæmia infantum* the edges are sharp and the enlargement does not go hand in hand with that of the spleen. The liver is also at times infiltrated with leukæmic patches and nodules not unlike miliary tubercles. The same is occasionlly true of the kidney.

The thymus gland has been found enlarged in some cases of acute lymphatic leukæmia, and even the skin, stomach, and gastro-splenic omentum have been the seat of growths presumably lymphatic. In fact there is no situation in which such growths may not make their appearance. The possibility of their being blood extravasations, white in consequence of the large proportion of white cells, is always to be remembered.

The lungs and heart alone seem free from encroachment by the lymphatic tissue. The heart may, however, be dislocated by a large spleen.

---

[1] Sajous' Annual for 1890, vol. ii., E. p. 12.

The alterations in the blood constitute really a part of the morbid anatomy of leukæmia, but are commonly treated under the head of symptomatology, where I, too, will consider them.

Symptoms.—The early symptoms of leukæmia are precisely those of the other anæmias, insidious onset, pallor, rapid breathing amounting to dyspnœa on exertion, weakness and faintness, headache, loss of appetite, and indigestion. The last two symptoms may precede all others. Moderate fever with rapid pulse is also present in the majority of cases, the temperature sometimes reaching 103° F. Headache more or less continuous is also a symptom. Swelling of the abdomen from an enlarged spleen may be the first noted, lymphatic glandular enlargements more rarely. In a case recently under my advice the first intimation of the presence of a large spleen was an attack of circumscribed peritonitis, favored, doubtless, by the presence of the splenic tumor and excited by exposure to cool air while perspiring. Hemorrhages from the nose and stomach are common, and dropsical swelling towards the close. Very recently Thomas Oliver reported a case terminating fatally by sudden post-peritoneal hemorrhage.[1] Hæmatemesis may be an early, an almost initiatory, and fatal symptom. Osler has recorded two striking cases terminating thus. Purpura hæmorrhagica sometimes presents itself as a manifestation of the same tendency, as may also cerebral hemorrhage, producing coma. Priapism is sometimes a symptom, and in a case of Edes was the first noted.

The urine often contains a little albumen, is high-colored and scanty, and deposits a copious sediment of uric acid.

Blood Changes.—The blood exhibits a most marked and diagnostic change, consisting in an enormous leucocytosis. Normal blood contains about six thousand colorless corpuscles to the cubic millimetre, which, with the red discs at four and a half million, makes the proportion one to seven hundred and fifty; or with the eruthrytes at five million, one to eight hundred and thirty-three. There is a physiological leucocytosis which after a full meal may reach one to one hundred and fifty, and even one to one hundred. In leukæmia, however, there may be one to fifty, to twenty-five, to ten, to three, to two, or the leucocytes may equal and in rare cases even exceed the red discs. A case at this time under my observation has one to six. The maximum proportion of colorless corpuscles impresses decidedly the color of the blood *en masse*, making it pink, or even the color of chocolate and milk, while aggregations of leucocytes may produce white streaks, and well justify the notion of the older pathologists that there was pus in the blood,—a suppuration of the blood, as they called it.

There is also a reduction in the total number of blood-cells, including white and colored, the quantity per cubic millimetre being sometimes reduced to between two and three millions. This reduction may be even more positive, as in a case reported by Suchannek,[2] in which there were three hundred and

[1] American Journal of the Medical Sciences, November, 1892.

[2] Sajous' Annual for 1891, vol. ii., E.

one thousand six hundred red discs and three hundred and six thousand one hundred colorless corpuscles.

Numerous nucleated red discs are sometimes present, and occasionally also poikilocytes. The hæmoglobin falls below the normal proportion, so that the value of each disc is lowered. The blood-plaques may be slightly increased.

An early discovery in the study of leukæmia was certain transparent octahedral crystals, known as Charcot's crystals, which form in blood which has been kept for some time on slides. Neumann referred these crystals to the bone-marrow, but Von Jaksch says they are the same as those sometimes found in the expectoration and in fæces and seminal fluid. There is reason to believe they are decomposition products, and that they hold no essential relation to leukæmia. That the alkalinity of the blood is sometimes diminished is true; that it is ever replaced by acidity is not true, although this was at one time held.

The further minute study of the blood in leukæmia requires a review of the histological characters of the colorless corpuscles in normal blood. These, through the studies of Ehrlich and others, have assumed a much greater complexity than heretofore. It occurred to Ehrlich that important differences in white corpuscles could be differentiated by staining-fluids, and, putting into practice this conception, he was enabled to discover five different varieties, as follows:

1. Lymphogenous elements arising in lymphatic glands. (*a*) Small lymphocytes. (*b*) Large lymphocytes.

2. Myelogenous elements arising in marrow, including eosinophile cells.

3. Undetermined elements arising in spleen and marrow, or in marrow only. (*a*) Large mononuclear cells. (*b*) Transitional forms. (*c*) Polynuclear cells.

I. (*a*) The small lymphocytes are somewhat smaller than the red blood-corpuscle (Fig. 1), and contain a large, round, deeply-staining nucleus, surrounded by a very scanty and almost invisible layer of homogeneous protoplasm. (Fig. 2.)

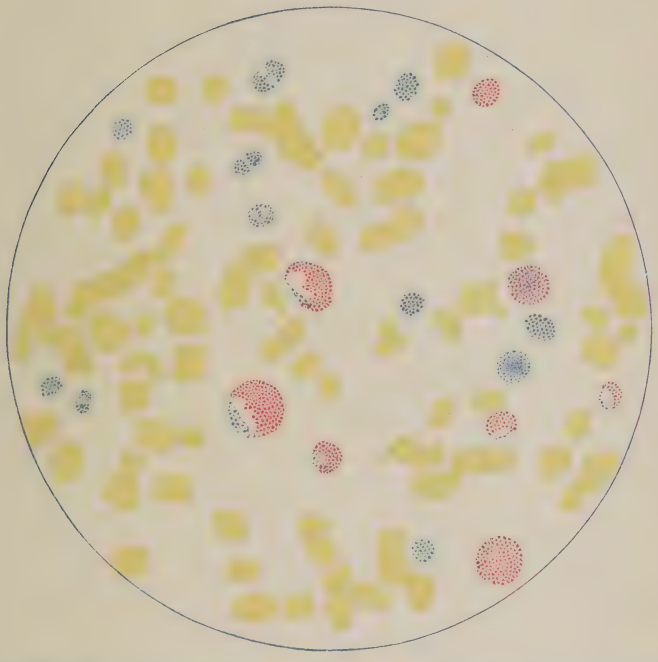
(*b*) The large lymphocytes are a further development of the first, and differ from them only in possessing a larger and easily recognizable rim of protoplasm. (Fig. 3.)

II. The eosinophile cells, originating in the bone-marrow and only rarely seen in normal blood, are colorless corpuscles, characterized by coarse granulation, containing one, two, and more rarely three nuclei. They take the *a*- or eosinophile granulation stain described below. (See plate, Fig. 8.)

III. Undetermined elements originating in spleen and marrow or marrow only. (*a*) The large mononuclear cells are about three times the size of a red blood-corpuscle, and contain a large round or ovoid nucleus and a large ring of protoplasm. (Fig. 5.) (*b*) The mononuclear transition form differs from these only in that the nucleus is no longer round or ovoid, but indented. (Fig. 6.) (*c*) The polynuclear elements (Fig. 7) are somewhat

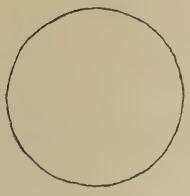
PLATE II.

FIG. 8.



BLOOD FROM CASE OF LEUKÆMIA, SHOWING EOSINOPHILOUS CELLS.—Ocular, Zentmeyer A. Objective, Zeiss $\frac{1}{12}$, oil immersion.

Fig. 1.



Red corpuscle.

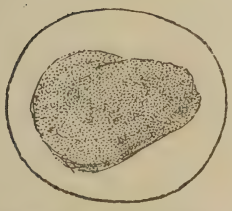
Fig. 2.

Small lymphocyte.

Fig. 3.

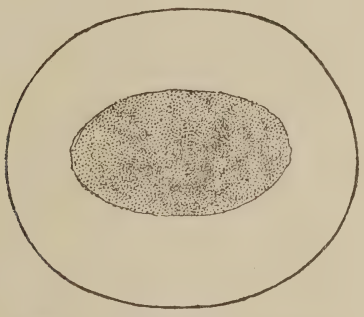
Large lymphocyte.

Fig. 4.



Myelogenous cell-element, including the α-granulation, or eosinophile granulation. Seldom found in normal blood, but greatly increased in leukæmic processes. Granules stainable in acid staining fluids.

Fig. 5.



Large, mononuclear cell. δ-granulation, or basophilic granulation. In leukæmia are found large cells like these, but presenting the "neutrophilic" granulation. Also myelogenic.

Fig. 6.

Transition form.

Fig. 7.

Polynuclear cell. ϵ-granulation, or neutrophilic granulation. Very delicate, neutral colors.

Figs. 1 to 7 are diagrammatic, intended to show the relative sizes of the various cells compared with the red corpuscle. After a drawing by my colleague Prof. Guiteras.

smaller, but still larger than the red corpuscles, and their nuclei exhibit further differentiation in that they are polymorphous. These are the more usual white blood-corpuscles, which have long been recognized. Except in the lymphocytes the protoplasm of these cells is granular, but the granulations possess different properties, which have also been investigated by Ehrlich, who makes five different varieties of granulation, which he distinguishes by letters of the Greek alphabet from α to ε, as follows:

The *α-granulation*, or *eosinophile* granulation, is characterized by large granules, highly refracting or oil-globule-like, and stainable by all acid aniline staining fluids. They are found in the myelogenous elements, very rare in normal blood, but strongly increased in leukæmic processes, and called *eosinophilic* by Ehrlich because of their strong affinity for eosin. (See plate.)

The *β-granulation*, or *amphophilic* granulation, is found especially in the cells of the medulla of bones, but also in blood, often in the leucocytes of rabbits and guinea-pigs, and is stained by acid and basic or similar fluids, hence called *amphophilic*.

The *γ-granulation*, or *basophilic* or "mastzellen granulation,"[1] is stainable by basic aniline colors, as are bacteria. The granules are coarse and refract light but slightly. This granulation is almost altogether wanting in healthy human blood, but is increased in leukæmic processes. These granules are also found in the blood of some animals in health, as the white rat.

The *δ-granulation*, also basophilic, is finer, stainable in basic aniline colors like bacteria, and is found in the large mononuclear leucocytes.

The *ε-granulation*, or *neutrophilic granulation*, is very delicate, and pervades the polynuclear elements of normal human blood very densely, is found sparingly in the transition forms of cells, and very seldom in the mononuclear elements. It is also characteristic of the *myelocyte* found only in leukæmic blood. It is stained by neutral coloring-matters, and therefore called *neutrophilic*. Such is the granulation of the common polynuclear leucocyte.

All these varieties of granules may become free in the blood by the disintegration of leucocytes, and are among the sources of error in recognizing bacteria in the blood.

In normal blood the polynuclear cells form sixty-five to eighty per cent. of the colorless corpuscles, the lymphocytes fifteen to thirty per cent., the mononuclear and transition forms about six per cent., and the eosinophiles two to four per cent.

Diagnosis.—The diagnosis of leukæmia requires the microscope, but with it becomes easy. A refinement of diagnosis, thus aided, attempts with more or less success to separate the different varieties, which are known as simple or complex, according as one or more of the cytogenous organs are

[1] This word is retained because there seems to be no corresponding word in English.

implicated. Thus, of the simple forms there would be the splenic, lymphatic, and myelogenous. In his recent monograph Rieder says that, so far as he knows, pure splenic and pure myelogenous forms have never been observed, while the pure lymphatic form has.[1] The latter is, however, rare, while a case of the pure myelogenous variety is, however, reported by Fraenkel, in a girl of fourteen.[2]

The most frequent of all the varieties is the complex form of *splenic myelogenous* or lieno-myelogenous. In it the *lymphocytes* are slightly if at all increased. They are relatively diminished; that is, instead of representing fifteen to thirty per cent. of all the leucocytes, they represent a smaller proportion. The *eosinophiles*, on the other hand, which are very rare in normal blood, are increased and conspicuously handsome in a stained preparation by their bright red granules. The polynuclear neutrophiles are either normal, sixty-five to eighty per cent., or relatively diminished, particularly towards the close. But the most characteristic feature of this variety is the presence of cells not found in normal blood, the *myelocytes* of Ehrlich, so called because of their supposed origin from the marrow of bone. They are mononuclear, as large as, and even larger than, the large mononuclear leucocytes, which they resemble also, but from which they differ in the fact that the protoplasm is "neutrophilic," while the mononuclear cells are "basophilic." To these forms Müller[3] has recently added another large mononuclear cell which exhibits karyokinetic figures. It is found in leukæmic blood and in the marrow, and is apparently the marrow-cell originally described by Cornil, and which is said not to occur in normal blood.

If relatively large leucocytes prevail, we may infer the presence of the splenic form with a relatively small involvement of the lymphatic glands and of the bone-marrow.

If there are numerous transitional forms between the white and red blood-cells, if there are nucleated red blood-corpuscles, but especially large polynuclear leucocytes, containing large eosinophilic granules, we may infer marked alterations in the bone-marrow; in a word that myelogenous leukæmia predominates.

In pure lymphatic leukæmia the colorless cells are never so numerous, scarcely ever exceeding one in ten, while the lymphocytes only are increased, all the other forms being greatly diminished, and myelocytes are altogether absent. In a case reported by Uthemann, ninety-three per cent. of all the leucocytes were lymphocytes, as compared with fifteen to thirty per cent. in normal blood.

In acute leucocytosis the ε-granulation or neutrophilic cells, both mono- and polynuclear forms, are increased, while the α-granulation or eosinophilic

---

[1] Beiträge zur Kenntniss der Leukcytosis. Von Dr. Hermann Rieder, 1892, S. 36.
[2] Deutsche medizinische Zeitung. Berlin, 1890. Sajous' Ann., vol. ii., E. 19.
[3] Archiv f. Klin. Med., 48, 51, 1891.

cells are apparently diminished. The reverse obtains in incipient leukæmias, where the eosinophilic and basophilic cells are increased.

Too much stress must not, however, be laid upon the diagnostic value of these cells, until observations multiply. Thus Von Jaksch found eosinophile-cells in the blood of an adult in health, of a boy with tuberculosis, in a case of pneumonia, and in all forms of anæmia. Dolega and Aldehoff have recently found numerous eosinophiles in the blood of malaria in three cases. Müller and Rieder have made similar observations, and Fink found numerous leucocytes of the eosinophilic-granulation type in the blood of asthmatics. So also Von Jaksch found the karyokinetic forms described by Müller in the blood of a case of sarcomatosis, as did also Weiss.[1]

Caution should be observed, too, in basing the presence of a leukæmia solely on a leucocytosis, as some remarkable instances of this condition have been reported wherein leukæmia did not supervene. Thus Von Jaksch, in his studies of the anæmia of children, found such proportions as one white to twelve red corpuscles, one to seventeen, and one to twenty; and in the case of an adult one to eight, and still no leukæmia followed.[2] The association of lymphatic or splenic or myelogenous change with the leucocytosis is essential to a diagnosis. And especially valuable as diagnostic of leukæmia is a large number of eosinophiles, and, according to Von Jaksch, Klein, and others, in the beginning of leukæmia this increase in the eosinophiles is the only change. Rieder is also inclined to regard the cases of so-called acute leukæmia as really acute inflammatory leucocytosis rather than leukæmia.

Allusion has already been made to an anæmia described by Von Jaksch as *anæmia infantum pseudoleukæmica*, further studied by Loos and Luzet, which is not to be confounded with leukæmia. Its essential feature is an enormous falling off in the cellular elements of the blood, the red cells being as low as eight hundred and twenty thousand, and the white fifty-four thousand six hundred and sixty-six. The proportion of leucocytes is always increased, but never to the same degree as in leukæmia, nor is it so rapidly brought about. On the other hand, the leucocytes are characterized by their varied shape and unusual size. The red cells display a high degree of poikilocytosis, while white cells enclosing red cells and fragments of red cells are also found, together with occasional eosinophilic leucocytes and large multinuclear neutrophilic leucocytes and nucleated red cells. All of these modifications of the blood-corpuscles may occur in leukæmia, but in the latter disease there is not as marked a reduction either in the hæmoglobin or in the number of cellular elements. The difference in the form of the liver and splenic enlargement in the two conditions has been referred to.

Prognosis.—The prognosis of leukæmia is unfavorable, the best that can

---

[1] For references to all the above see Von Jaksch, Klinische Diagnostik, third edit., 1892, p. 31. All are within the dates 1890–91.

[2] Op. citat., p. 29.

be expected from treatment being the deferring of the fatal end. Some rather remarkable fluctuations are noted, and cases of cure are even reported, especially of late by inhalations of oxygen. The lymphatic leukæmias are the more acute and more intractable.

Treatment.—The treatment has heretofore been mainly with iron, quinine, and arsenic, fresh air, and good food. Large doses of arsenic, as much as thirty drops of Fowler's solution, reached by gradual increment, have been especially recommended, and certainly should be tried.

Inhalations of oxygen, suggested in 1887, were used by Sticker and Pletzer with temporary benefit, and Da Costa and Hershey report the apparent cure of one case, a boy of thirteen, and such marked improvement in a man of thirty-five that he was thought for a time to be cured. This treatment deserves, therefore, to be tried along with that first named. Thirty to one hundred litres (about four to twelve gallons) of oxygen are to be used daily.

IV.—LYMPHATIC ANÆMIA.

The fourth of the essential anæmias is *lymphatic anæmia,* also known as Hodgkin's disease, pseudoleukæmia, lymphadenosis, lymphadenoma, malignant lymphoma (Billroth), adénie and lymph-adénie. Hodgkin's paper, to which we are indebted for our first definite knowledge of the disease, appeared in 1832.

The disease consists essentially in an anæmia unassociated with an increase in the colorless corpuscles of the blood, accompanied by a fibro-adenic enlargement of the lymphatic glands, and the formation of lymphatic foci in the spleen, and occasionally in other glandular organs.

Etiology.—Its etiology is as undetermined as that of leukæmia. Depressing influences of all kinds are believed to favor it. Scrofulosis has sometimes preceded it. The presence of an irritating substance in the blood has been suggested, and the necessity of local irritation, associated with a lymphatic diathesis, has been insisted upon by Trousseau.

Morbid Anatomy.—Its morbid anatomy is, however, definite. There is both lymphatic and splenic involvement, the latter secondary to the former. The tonsils, intestinal lymphatic structures, and even the liver and kidneys, may be invaded. There is, moreover, a deposition of new foci of lymphatic tissue decidedly more marked than in leukæmia. The enlargement usually begins first in the more superficial groups, as those of the submaxillary region, neck, axilla, and groin, but the entire lymphatic system may be involved, including the retroperitoneal glands, resulting sometimes in marked abdominal enlargement. Occasionally the overgrowth is limited to the deep-seated glands. Of the abdominal, the retroperitoneal are most frequently involved, producing tumors which have been mistaken for myomata of the uterus. The bronchial glands may also be involved, and by their pressure produce dyspnœa.

The process is a hyperplastic one, shared by the cellular and trabecular

tissue in varying degrees. When the former predominates the product is soft and exudes a milky juice on section; when the latter, it is firm and resisting. The individual glands are not disposed to fuse, nor to become adherent to adjacent tissue, differing in this respect greatly from glands enlarged by the tubercular process. The lymphatic enlargement exceeds also that in leukæmia, while the splenic involvement is more limited, the organ rarely exceeding ten inches in length, as contrasted with the colossal size of the leukæmic spleen.

The alteration in the spleen is hyperplastic, involving the pulp and Malpighian bodies jointly, or alone. The enlarged Malpighian bodies furnish the most characteristic feature. They form grayish-white masses, varying in size from that of a barley-grain to a walnut, a couple of millimetres to as many centimetres in diameter, and contrast strongly with the dark-red parenchyma. The process in the Malpighian bodies is a true hypertrophy of the adenoid tissue, while in the pulp it is rather the trabecular tissue which is overgrown. The spleen, however, is not always involved. Thus, Gowers found splenic enlargement in seventy-five per cent. of the cases collected; the organ contained lymphoid growths in fifty-six of these.

There are, likewise, at times changes in the marrow of bones, which is converted into lymphoid tissue, sometimes pyoid in consistence.

The liver and kidney, and even the thymus gland and lungs, are sometimes the seat of lymphoid deposits; in fact, all organs and tissues may be invaded, including the nervous; and paraplegia has resulted from pressure on the cord of growths in the spinal canal. The posterior nares may be occluded by invasion of the tonsils and the numerous lymphoid follicles in the pharynx. In like manner the intestinal walls may be invaded, producing thickening, while even serous surfaces do not escape.

Symptoms.—The symptoms of Hodgkin's disease are again the pallor, weakness, dyspnœa, palpitation, and other signs of anæmia, concurrent, or even sometimes in advance of the glandular enlargement. There is quite often fever, very irregular and variable in degree, and cases have been observed by Murchison and De Renzi in which there was paroxysmal glandular enlargement, coinciding with fever, the enlargement subsiding with the decline of the fever, but not reaching the degree present prior to the enlargement. In a case of Laache's the glands diminished in size during the fever. In a case under my care in the wards of the Hospital of the University of Pennsylvania, in which the glandular enlargement was not conspicuous, there occurred an intermittent rise of temperature ascribed to a concurrent peritonitis, but the autopsy discovered this to be so limited that it is perhaps more reasonable to ascribe it to the feverish tendency characteristic of the disease.

The glandular enlargements themselves contribute further to the symptoms. Thus, in the case of the bronchial glands, dyspnœa from pressure on bronchi or trachea may occur, and is apt also to be intermittent. Pressure elsewhere may lead to pleuritic or abdominal effusions, while the entangle-

ment of nerves in the growth may cause pain. Bronzing of the skin has been found associated with enlargement of the abdominal glands.

The external glandular growths are variously conspicuous; occasionally, however, they are wholly absent. There is no fixed order of involvement, although the submaxillary commonly enlarge first, and with the acme of their growth produce a striking picture. Extreme dyspnœa may arise from encroachment upon the trachea. The enlargement is not uniform, but at times remits and even ceases. It is said it may even disappear altogether for a time. The glands are usually soft, sometimes even to a sense of fluctuation. On the other hand, erosion of bone may result from pressure.

Macroscopically the blood appears thin and pale, and generally the red corpuscles are diminished in number, although not always. Minimum counts make nine hundred and sixty thousand[1] to the cubic millimetre, while in a case reported by Henry,[2] that of a boy of five, with enormous enlargement of the right cervical glands, there were five million four hundred and sixty-two thousand to the cubic millimetre. Osler has never counted less than two million. Thus the diminution is less than in pernicious anæmia. The hæmoglobin is, however, reduced to at least sixty per cent., furnishing thus one of the conditions essential to anæmia.

There are few nucleated red corpuscles and poikilocytes, and especially microcytes. The leucocytes may be slightly increased, occasionally decidedly so, but this is rare, and there is no approximation to the leukæmic state of the blood, and the two states are distinct and separate. A combination of the two may be possible.

Diagnosis.—The diagnosis requires some care, as more than one condition is attended by similar glandular outgrowths. Chronic and even acute adenitis have been mistaken for the early manifestations of Hodgkin's disease, while the converse has obtained perhaps more frequently. Time is the arbiter of such uncertainty.

A group of tubercular glands resembles more closely the disease under consideration, but it is not usually difficult to distinguish the two. Tubercular glands are adherent to each other and adjacent tissues, while the lymphadenoid growths are loose and easily movable. Tuberculosis rarely involves more than one group of glands, is characterized by caseation and suppuration, while the lymphadenoid growths almost never suppurate. Yet the tubercular process is the slower. Tuberculosis is commonly found in young persons under twenty. Hodgkin's disease may occur at any age, and is more common in males. In Gowers' one hundred cases, seventy-five were males and fifty females; fifty were under thirty, and sixty-four under forty.

Simple lymphoma, affecting as it does a group of glands, resembles most

---

[1] Case reported by Richard Geigel, quoted by Henry (Anæmia, Philadelphia, 1887), from Deutches Archiv für Klinische Med., 1885, Bd. 37, p. 59.

[2] Op. citat., p. 67.

closely lymphadenoma. But it is harder and slower-growing than the lymphatic growth of Hodgkin's disease, while it does not affect the system.

Sarcoma also involves groups of glands, and in the beginning the consistence of the glands is similar to that in Hodgkin's disease. But this disease rapidly invades surrounding tissues, fusing with them, and destructive ulceration soon makes its appearance.

Carcinoma of lymphatic glands should also be mentioned as producing a somewhat similar growth associated also with cachexia, but it is for the most part secondary to cancer somewhere else.

Finally all the conditions named as possible to be mistaken for Hodgkin's disease are limited to single groups, while the latter always extends, and the fact of such limitation is of itself sufficient to preclude the disease.

From leucocythæmia the disease is easily distinguished by the leucocytosis characteristic of the former.

Prognosis.—While the prognosis is ultimately fatal, the course of the disease varies greatly, and death seldom results in less than a year. F. P. Henry puts the average duration of life at two years, but admits it is greatly modified by such circumstances as age and previous health of the patient.

Treatment.—Treatment, too, may avert the fatal termination for a long time. Extraordinary results in this respect have followed the administration of arsenic, and even recoveries have been reported. Large doses arrived at by gradual increment should be attained and kept up until some physiological effects are observed. Such doses are fifteen to twenty minims of Fowler's solution. Particularly happy results are claimed for the injection of arsenic into the lymphoid masses. Especially is this recommended when arsenic is not well borne by the stomach. From eight to thirty minims of Fowler's solution have been injected daily in divided doses. Inunctions of iodine and iodide of potassium are also recommended. Supporting treatment of all kinds, including quinine, cod-liver oil, and the best of food, is necessary.

Operative interference is sometimes necessary to avert danger to life threatened by the encroachment of enlarged glands on vital organs and functions, such as respiration. It has even been claimed that the removal of a group of primarily enlarged glands has cut short the spread of the disease, but while such an apparent result is rather an evidence of error in diagnosis, in view of the fact that at an early stage a diagnosis is impossible, the removal of a local group of glands should be recommended.

V.—SPLENIC ANÆMIA, OR SPLENIC PSEUDOLEUKÆMIA.

This term is applied to a condition in all respects analogous to Hodgkin's disease, where there is splenic enlargement only, and no involvement of the lymphatic glands. Attention was first called to it as a separate variety of pseudoleukæmia, by Horatio C. Wood,[1] in 1871, although

[1] Relations of Leucocythæmia and Pseudoleukæmia, American Journal of the Medical Sciences, October, 1871.

reports of cases corresponding to it had been previously made by others. It has been more recently studied by Strümpell and Banti. It occurs alike in old and young without assignable cause.

Morbid Anatomy.—Its morbid anatomy consists in the splenic changes. The organ is greatly enlarged, approaching that of the leukæmic spleen rather than the spleen of Hodgkin's disease. It is three to four times its normal size, but retains its normal shape. It is indurated, and its incisures are deep. Its capsule is thickened and opaque in spots, and sometimes adherent to adjacent tissues, as is often true of any large spleen. The histology of the organ differs from that of the leukæmic enlargement and that of the enlarged spleen of Hodgkin's disease. There is no true overgrowth of the lymphatic tissue in the Malpighian body, but rather a destruction, it being replaced by an overgrowth of the reticulum, producing a white body as large as a pea. In addition to this the organ is often traversed by bands of thickened reticulum, visible to the naked eye. The change corresponds rather with that in the harder lymphatic glands of Hodgkin's disease than that in the spleen. In a word, as well stated by Banti, the histological alterations of the spleen consist of an atrophy and sclerosis of the Malpighian corpuscles. Marrow changes like those described under pernicious anæmia are also sometimes present.

The blood exhibits the changes one would expect where there is destruction of the tissue devoted to its reproduction. It is anæmic. The red discs are notably diminished, from five million to as low as even one million. There are found also the other changes of the eruthrocytes characteristic of pernicious anæmia. There are poikilocytosis, megalocytosis, and microcytosis. Nucleated red blood-cells are also sometimes present. The leucocytes are sometimes slightly more numerous, at others they are in normal proportion, and are said to be generally mononuclear.

Symptoms.—As the blood-changes are analogous to those of pernicious anæmia, so are also the symptoms, which include pallor, weakness, dyspnœa, palpitation associated with the signs of enlarged spleen, evidence of which is sometimes shown by its weight and the pressure it exerts, before other symptoms show themselves. Finally, there results the cachectic state characterized by emaciation, a deeper yellow color of the skin and mucous membranes, a tendency to hemorrhage and pyrexia, œdema, serous effusions, extreme muscular prostration, and mental hebetude. There is also said to be at times, as in lymphatic pseudoleukæmia, an intermittent or *per saltem* course in the symptoms to the extent of apparent complete restoration to health in the intervals.

An increase in the urea of the urine has been noted by Strümpell, and is regarded as evidence of increased albuminoid metamorphosis.

All clinical facts go to show that the spleen is responsible in some way for a destruction of eruthrocytes and of their capacity for carrying oxygen.

The duration of the disease is from five or six months to three years.

Diagnosis.—The diagnosis of splenic leukæmia depends upon the pres-

ence of splenic enlargement associated with the phenomena of anæmia above described, and the absence of glandular enlargement so conspicuous in Hodgkin's disease. Anæmic symptoms attend the chronic malaria so often associated with enlarged spleen, but the history of malaria in such cases is invariably present, while the degree of anæmia is not so deep.

Prognosis.—The prognosis has been unfavorable, but may be modified by the results of splenectomy, which in the cases collected by Banti appears to have been successful in three out of four.

Treatment.—The treatment is that for the other anæmias, by iron and arsenic and nutritious food. The propriety of splenectomy must be determined on the merits of each case.

HEART-FAILURE.[1]

BY ALFRED L. LOOMIS, M.D., LL.D.,

New York.

HEART-FAILURE is a term which has been quite extensively used recently by the profession and the public. The purpose of this paper is to determine, if possible, the underlying conditions which are usually present when sudden and fatal heart-failure occurs.

The following abstracts from a few typical cases which have come under my observation will emphasize most of the cardiac conditions which enter into an intelligent discussion of this subject:

CASE I.—A gentleman fifty years of age, and somewhat out of health, took a vacation in the country in the summer of 1890, to recuperate. He was advised to take active physical exercise. Under such instructions long walks were undertaken, and mountain climbing was attempted. A mountain ascent of two thousand feet brought on a cardiac syncope from which he did not rally. At the autopsy his heart was found hypertrophied and dilated; his arteries presented the characteristic appearance of cardiac fibrosis; and his kidneys were typical specimens of renal fibrosis. The lumen of both coronary arteries, near their origin, was markedly diminished by fibroid changes in their walls, and the anterior was completely blocked by a soft thrombus.

In this case an hypertrophied and dilated heart, associated with general arterial fibrosis, certainly contraindicated active physical exercise, even if none of the usual signs of commencing heart-insufficiency had been present. Experience, and our knowledge of the obstructive changes in the coronary circulation which are almost certain to exist under such conditions, render it probable that if such a heart is forced into violent contraction, either a fatal dilatation of the ventricular cavities would take place, or a coronary thrombus would result. The medical adviser is in some degree responsible for such a heart-failure.

---

[1] Read before the American Climatological Association, Richfield Springs, New York, June 24, 1892.

Case II.—A gentleman of gouty habit, sixty-three years of age, who had suffered from frequent attacks of dyspnœa after active physical exercise, with occasional prolonged attacks of vertigo, was seized, early in December, 1889, with a severe influenza. In addition to the usual symptoms of this malady, his heart-action during the entire illness was unusually frequent, irregular, and at times intermitting. In the fourth week of convalescence he was subjected to a violent emotional excitement, soon after which he passed into a condition of collapse from which he could not be fully rallied, and in a few hours died.

At the autopsy his heart was found greatly enlarged; all its cavities were distended with blood. The walls of the left ventricle were firmer and thicker than normal, and had undergone quite extensive fibroid changes. The small branches of the coronary arteries adjacent to the fibroid changes in the heart-wall presented the characteristic evidences of fibrosis, and the kidneys were contracted.

In this case the evidences of general fibrosis were so apparent, prior to the attack of influenza, that the existence of fibroid disease of the heart might have been inferred, even though no positive cardiac signs of such a condition could be made out. During the early period of the attack, however, it became evident from the great rapidity, feebleness, and irregularity of the heart-action that the integrity of the heart-muscle was impaired. Experience teaches that such hearts act badly under the influence of all acute infections, especially that of influenza. Whether the cardiac disturbance in these cases is due to faulty innervation, or to the direct action of the infection upon the nutrition of the cardiac muscle, cannot always be determined; but it is evident under such conditions that the greatest care should be exercised, not only during the active period of the disease, but during the entire convalescence, that the heart shall not be subjected to any extra strain. If absolute rest had been maintained in this case until the patient had fully recovered from the toxæmia, the probabilities are that sudden and fatal dilatation of the cardiac cavities would not have occurred.

Case III.—A chronic alcoholic subject, thirty-five years of age, passed through the first five days of an acute lobar pneumonia without any serious or alarming symptoms. His pulse during the whole period was perfectly regular, and never over one hundred per minute. On the morning of the sixth day, without any apparent reason, his heart-action suddenly became feeble, frequent, irregular, and intermitting, and in twenty-four hours he died, with the usual evidences of heart-failure.

At the autopsy the heart presented a normal appearance, and no abnormal changes could be detected except parenchymatous granular degeneration in the ventricular walls, which is sometimes met with in acute alcoholic poisoning.

Although this patient was only thirty-five years of age, he presented the usual appearance of advanced alcoholism,—he evidently had been a hard drinker. It is not easy to account for the sudden change which occurs in the heart-action in so many alcoholic subjects about the sixth day of an acute lobar pneumonia, unless we assume that it is due to nervous exhaustion. It is well established that the principal or most constant lesion of chronic alcoholism is to be found in the nervous system in the development of changes which end in alcoholic neuritis, and it is reasonable to assume that even a moderate rise in body temperature in such a subject may cause so great disturbance in the cardiac nerve-supply as to lead to a dangerous feebleness of the heart-contractions. With the possible occurrence of such a catastrophe, in all alcoholic pneumonias we should fortify the heart by the early and free use of strychnia. I am quite sure that within the past two years I have held many hearts through an alcoholic pneumonia by the one-twenty-fifth of a grain of strychnia, hypodermically, every four hours.

Case IV.—A chronic diabetic, fifty-six years of age, feeling unusually well, walked to church, about one-half mile from his residence, after a hearty breakfast. Just as he reached his pew, near the centre of the church, he staggered and fell, and

was taken to the vestibule, apparently in a dying condition. His countenance was pale; his respirations slow, regular, and without difficulty. His radial pulse was not perceptible; his heart-sounds were indistinct and intermitting. The free use of hypodermics of brandy, ammonia, and digitalis had no perceptible effect upon his heart-action, and in about an hour he ceased to breathe. He was perfectly conscious up to a few moments before death.

An autopsy revealed advanced fatty degeneration of the heart without any obstruction in the coronary circulation. While fatty degeneration of the heart is sometimes met with in conditions of extreme cachexia without any obstructive changes in the coronary vessels, its occurrence in diabetes must be rare, for this is the first case of diabetes which has come under my observation where it was the direct cause of death. It is interesting to note the close relation which existed in this case between the ingestion of a hearty meal and the occurrence of fatal heart-failure, and it emphasizes the importance of guarding individuals with such hearts from over-indulgence.

Case V.—A young man of twenty, convalescing satisfactorily from a severe typhoid fever, was seized with extreme dyspnœa after going up a flight of stairs, during his sixth week. His countenance assumed a pale, anxious expression; his pulse became rapid, feeble, irregular, intermitting, and at times imperceptible; the heart-sounds were indistinct; his extremities became cold, and he soon passed into complete collapse and died.

An autopsy revealed an extremely dilated and softened heart. Undoubtedly the period of greatest weakening of the heart in all severe cases of typhoid fever is during the height of the fever, and at the beginning of convalescence. The same is true in other acute infectious fevers. The loss of contractile power of the heart, under such circumstances, is usually temporary; but, if excessive heart-strain occurs, permanent cardiac dilatation may result, which will lead to dangerous heart-insufficiency. This case is especially interesting as an example of the continuance of the cardiac weakening, common to typhoid fever, into the period of convalescence. Usually when the typhoid heart has passed through the process of softening, the heart-muscle has sufficiently recovered its integrity to resist so moderate a strain as would occur during the ascent of a flight of stairs. It, however, emphasizes the necessity of insisting that convalescents from typhoid fever shall not be subjected to any form of heart-strain.

Case VI.—A typewriter, twenty-six years of age, who, for six or eight months, had been troubled more or less with cardiac palpitation and dyspnœa, entered the hospital on the 20th of April, 1891, with an acute general bronchitis. The existence of aortic incompetency was early recognized by the presence of a loud diastolic murmur; the left cardiac area of dulness was greatly increased; and the apex-beat was diffused, feeble, and irregular. At the end of two weeks she had entirely recovered from her bronchitis, and her general condition was so much improved that she left the hospital. On the 10th of May she felt quite well, and visited the hospital to see a friend. I again examined her; there was no apparent change in the condition of her heart, except that the area of cardiac dulness seemed increased, the impulse less distinct, and the irregularity of the heart-action more pronounced. On the 20th of May she was brought into the hospital in a condition of complete asystolism, from which she did not recover, and during the following night she died.

At the autopsy the aortic orifice was found dilated, and its valves thickened and incompetent. The heart was more dilated than hypertrophied, weighed nineteen ounces, and both ventricles were distended with dark blood. The walls of the left ventricle presented changes which were evidently of syphilitic origin. Small gummata were found, both in the liver and spleen. The existence of such extensive aortic lesions as were found in this case is unusual in so young a subject, and suggested a syphilitic origin. The irregularity in the cardiac systole at the time of

her admission into the hospital, and its continuance after her recovery from her bronchitis, indicated serious changes in the cardiac walls, the exact nature of which could not be determined during life. Although authorities regard aortic insufficiency as the valvular lesion which is most frequently associated with sudden death, I have rarely found it present in those who have died suddenly of heart-disease, unless it was associated with other serious cardiac or arterial changes.

Case VII.—On the 3d of last December I was invited to visit an anæmic, neurotic girl of eighteen, who had been seriously ill for five weeks with an acute pulmonary affection. I found the left pleural cavity distended with fluid, and the apex of the heart beating near the right nipple. She was compelled to assume constantly a half-sitting posture, on account of extreme dyspnœa. I was informed that twice during the preceding week she had been in imminent danger of dying from heart-failure. I advised that the left chest should be aspirated. About twenty-four hours afterwards she was found by the nurse in a state of collapse. Restoratives were resorted to, and the chest was aspirated. A large quantity of pus was removed, but she rapidly sank and died in a few hours.

At the autopsy the heart was found perfectly normal. The only morbid condition was a suppurative pleurisy on the left side. I have never been able to determine the direct cause of death in such cases. Twice has it happened that patients have been brought into my hospital-wards with their left pleural cavities distended with fluid, and before their condition was fully appreciated they have suddenly died, after some slight exertion, apparently of heart-failure. Certainly these patients do not die from failure in the contractile power of the heart, for there is no evidence, either before or after death, that there was any cardiac insufficiency. The only explanation I have to offer for such occurrences is, that the fluid accumulates so rapidly, and the pressure is so great, that the right heart is unable to overcome the resistance to the pulmonary circulation, and the heart's action is arrested during diastole.

An analysis of the cases of which I have given abstracts makes it evident that fatal heart-failure is rarely so sudden as we are accustomed to regard it; and if such cases are carefully studied, and all the symptoms properly appreciated, its occurrence in most instances can be prognosticated with a great degree of certainty, and in many instances it may be averted. It seems safe to assume that heart-failure is impossible, so long as the heart-cavities are of normal size, the heart-muscle of normal integrity, and the cardiac innervation not seriously disturbed, the function of the trophic nerves being normal. So long as full nutrition is maintained in the cardiac walls, the heart meets every obstacle with added force; and only when the contractility of its walls is weakened do we find that nature's pathological efforts have been put forth to end in that evidence of exhausted vitality,—cardiac insufficiency.

I would, therefore, include all heart-failures in three classes:

First.—Those in which the heart has for a long time been called upon to perform an abnormal amount of work, as in valvular or arterial disease.

Second.—Those in which obstructive changes in the coronary vessels markedly diminish the nutritive supply of the cardiac muscle.

Third.—Those in which toxic influences act directly upon the nutrition of the cardiac muscle, or so interfere with the cardiac nerve-supply as to lessen cardiac resistance.

The cases which may be included in my *first class* are, perhaps, more numerous than those belonging to the other two classes, and are far more easily recognized. There is always a limit to the heart-compensation in valvular diseases, and in general arterial fibrosis; and the danger-point should be carefully estimated whenever this class of subjects is called upon to struggle with an intercurrent disease, or to resist sudden and violent heart-strain. Not only must the resisting power of the heart be carefully estimated, but the existence or non-existence of morbid changes in other organs be accurately determined; the aim should be not so much to treat the heart-failure as to prevent its occurrence. The difficulty of determining the limit of compensation in valvular diseases is sometimes very great; but if the physical examination of such hearts is carefully conducted, and the pulmonary and arterial changes fully appreciated, I am quite certain that in most instances it can be done, or at least one can recognize the existence of even slight failure of compensation, and estimate pretty accurately the point of tension at which it will be reached. By doing this, fatal heart-failure may often be avoided, or at least postponed.

Those cases included in my *second class* are far more difficult of recognition. Yet I am convinced, from a careful study of such cases, that in fibroid disease of the heart it is possible to make an early diagnosis. The diagnostic symptoms of this condition may be stated briefly as follows: a feeble, rapid, irregular pulse; a diffused, feeble, cardiac impulse; weak but sharp heart-sounds, the first sound closely resembling the second in tone and duration,—having a close resemblance to fœtal heart-sounds. Advanced cases are subject to frequent attacks of extreme præcordial anguish, accompanied by præcordial pain and oppression, with a sense of impending suffocation; the countenance assumes a death-like pallor, with cold extremities, and there is a tendency to syncope. The intensity and constancy of this class of symptoms will vary in different individuals. In some the only symptoms which will be noticed by the patient for a long time will be a feeble, fluttering, irregular, and intermittent heart-action: now and then the patient will complain of epigastric pulsation, and temporary attacks of suffocation, and he will soon learn to avoid any prolonged physical exertion, for he finds that it makes him feel uncomfortable about his heart, from which it takes him a long time to recover. Usually when these cases have reached the condition in which severe attacks of præcordial anguish and anginal pains are of frequent occurrence, the end is not far distant. It is evident, therefore, in making a diagnosis of cardiac fibrosis, one must first determine, by the symptoms and physical signs, that the heart is chronically weak, and that there are no valvular or other lesions to account for this weakness. If, then, we find the evidences of a chronically weak heart in one who has a strong fibroid history, accompanied by the signs of lithæmia, we have reason to suspect cardiac fibrosis; and if we find that the administration of digitalis and other heart-tonics not only fails to restore the cardiac rhythm, but on the contrary makes its action more irregular and intermitting, in-

creasing rather than relieving the cardiac apnœa, we may be quite sure that cardiac fibrosis exists. The danger of sudden heart-failure in this class of subjects is so great that it renders all acute diseases dangerous, and contra-indicates all severe heart-strain. For whenever the point of cardiac resistance is once passed, we can never hope to fully re-establish it.

Post-mortem studies teach that fatty degeneration of the heart is usually associated with obstructive changes in the aorta, and at the origin of the coronary arteries, while, as I have already stated, fibroid changes are usually associated with obstructive changes in the coronary arterioles. Although the danger of sudden heart-failure is very great in fatty hearts, experience teaches that it is by no means as frequently met with at the autopsy table as the fibroid heart. The explanation of this, I think, is to be found in the fact that general obstructive arterial changes are less often associated with fatty than with fibroid hearts, and consequently in acute disease the heart-strain is less, and sudden heart-failure less frequently occurs.

Those cases included in my *third class* are often difficult of explanation, for we are unable to determine always whether toxic influences diminish heart-resistance through its nerve-supply, or by their direct action upon the nutrition of the cardiac muscle. An alcoholic heart, for instance, loses its contractile and resisting power, both through morbid changes in its nerve-ganglia and in its muscle-fibres. In typhoid fever muscle-changes are evidently the cause of the heart-enfeeblement, while in diphtheria disturbances in innervation cause the heart-insufficiency.

However we may explain it, clinical observation teaches that some chronic, and many acute, infections so diminish heart-power that sudden heart-failure occurs in hearts that, previous to this infection, were of normal integrity. It then becomes of the utmost importance, in all toxic conditions, to watch for the first indications of cardiac weakness. On this principle Stokes based his great rule for the use of alcoholic stimulants in the treatment of typhoid fever, when he directed, "that in every case of fever, if the first sound of the heart became indistinct, stimulants should immediately be given in sufficient quantities to restore the heart-tone." It is on this principle, also, that strychnia holds an alcoholic heart in pneumonia, by restoring or increasing its nerve-supply. A rule which for a long time has governed me in all toxic conditions is, not to wait for signs of commencing heart-failure, but to begin the administration of alcohol, strychnia, and other heart-tonics early, and thus, if possible, save my patients from fatal heart-failure.

A review of the cases which I have presented makes it evident that the term heart-failure is misleading and should be abandoned, for in most instances it does not express the pathological state. It is equally evident that the term "death by heart-failure" is often used to cover the ignorance of the medical attendants.

NOTE ON THE USE OF GUAIACOL IN PULMONARY TUBERCULOSIS.

BY D. MEREDITH REESE, M.D.,[1]

Late Resident Assistant in the Medical Clinic, Johns Hopkins Hospital.

GUAIACOL, a product of the aromatic series, obtained by the destructive distillation of guaiacum resin, is the chief ingredient in beech creosote, to the extent of from sixty to ninety per cent. Very favorable reports have been published of its efficacy in pulmonary tuberculosis by Sahli and others. Under its use it is claimed that the cough and expectoration decrease, the fever lessens, the night-sweats abate, the subjective feelings of the patient improve, and there is a marked improvement in the general nutrition.

The cases treated in Professor Osler's clinic numbered one hundred and one,—sixty-six in the out-patient department, thirty-five in the wards. As a rule the patients were kept under observation for a few days before beginning the treatment. A careful physical examination was made, and the pulse, respirations, and temperature were noted. In the ward cases the temperature was taken every two hours during the day. The sputum was examined for tubercle bacilli and elastic tissue, the amount measured daily, and once a week a note made of its character and of the relative number of bacilli. The hospital patients had a nourishing diet, and were kept in the sunshine and open air as much as possible. The guaiacol was prescribed as follows: beginning with one minim three times a day (with sufficient alcohol for solution, and two drachms of compound tincture of gentian), the dose was increased every fourth day until the quantity taken was from ten to fifteen minims. In the out-patients observations were made from time to time as far as they could give any satisfactory account of themselves, the physical signs were noted, and once a week the sputum was examined. In the hospital cases daily notes were made of the general condition, and from time to time of the physical signs, and the patients were weighed every second or third week.

Of the sixty-six dispensary cases thirty-five had extensive disease with softening at one apex or base, thirty-one had only slight disease at one or other apex. The results may be summarized thus: In the first group of thirty-five cases the cough and expectoration were lessened materially in eight. The general nutrition was slightly improved in five. In the

---

[1] Since writing this paper the author has himself died of pulmonary tuberculosis, and the profession has lost an able and promising member.—W. O.

others there was no change. Of the second series of thirty-one cases, in ten the cough and expectoration were lessened, the body weight improved, the fever lessened, and the appetite was increased. Among the ward patients, thirty-five in number, of nineteen tolerably advanced cases five showed slight and transient improvement. In sixteen instances with more moderate disease there was lessening of the cough and expectoration, increase in weight and strength, and improvement in the general condition. In a few cases the night-sweats became less frequent. The influence upon the expectoration was variable. In four early cases the amount was greatly reduced and the character changed from muco-purulent to mucoid. In these cases, too, the physical signs became less marked; in only one, however, did the bacilli disappear from the sputum.

In three of the ward cases the guaiacol was used hypodermically (a ten minim injection daily), a method which has been strongly urged as having an important influence in reducing the fever. Two of these cases presented signs of rapid consolidation with high evening and low morning temperature. The third case presented only slight disease at the left apex. In none of these was the temperature lowered more than one degree an hour after the injection; subsequently it always rose to its previous limit. In one of the cases the cough and expectoration were markedly influenced by the injections, and the sputum decreased from four hundred and twenty-five cubic centimetres daily to two hundred cubic centimetres a week after the injections began. The patients complained of pain at the seat of the injection, but in no case was there abscess formation.

Practically the drug appears to have no definite effect upon the temperature, pulse, or respiration; nor does it seem to check the sweats. In a number of cases, however, the cough decreased and the expectoration lessened during its employment. In a few cases the physical signs improved, but there does not seem to be any evidence that the remedy had special influence upon the bacilli. In early cases the general nutrition is benefited and the appetite improves under its use. Guaiacol has this important advantage over creosote,—it is less liable to produce gastric disturbance. In no instance in the series did it seem in any way to interfere with digestion.

MEDICAL JURISPRUDENCE OF ALCOHOLIC INEBRIETY.

BY T. D. CROTHERS, M.D.,

Superintendent of Walnut Lodge Hospital, Hartford, Connecticut.

It is more and more apparent every day that new divisions of the army of the insane have appeared, and are camped all about us—an army that is steadily increasing, more mysterious and obscure than the lunatic described in the text-books, and of more physiological and psychological

interest. They are the *alcoholic*, the *opium*, and the *chloral inebriates*. Of these three drugs alcohol is always used, the others are associated either as leading or subordinate causes. These maniacs appear in court as criminals, as authors and victims of wrongs, as disturbers of the peace and the order of business and society. In conduct, character, and apparent motive they appear both sane and insane; at times exhibiting many symptoms of insanity, such as manias, delusions, deliriums, and imbecilities, then acting sanely. Public opinion assumes that sane intervals of thought and act are evidence of mental health and capacity, while other phases are depravity or savagery inborn in the race. This is the teaching of the pulpit and press, which has come down to us from the past. This theory that inebriety is purely a moral disorder, to be reached and controlled by moral and legal measures, is the basis of all laws and legislation for inebriates up to the present time. From a scientific point of view these inebriates are maniacs, whose disorder comes from causes that are clear and unmistakable, following down a progressive line of dissolution that is not only traceable, but certain and uniform in its course. Of the estimated half a million inebriates in this country, over thirty per cent. come under legal notice yearly. Fourteen per cent. of this number are arrested for crime of all degrees. Two per cent. commit murder, and the remaining fourteen per cent. appear as litigants in the courts. A nearer view will show in nearly every criminal court of the land many persons awaiting trial and sentence for crime committed while under the influence of alcohol. In the petty courts a very large part of all the business is the punishment of inebriates, and the adjudication of cases which turn on the state and conduct of persons intoxicated by spirits.

In the probate courts, the validity of wills is questioned on the same ground, and in the civil courts business contracts and all kinds of disputes are contested, because of the intoxication of one or more of the parties concerned. Divorce suits are equally numerous where the vital question turns on the inebriety of the parties. These facts give some idea of the extent of inebriety as a medico-legal question, and suggest an urgent necessity for some clear rational principles on which to build a jurisprudence. At present the theory in common practice in the lower courts is that alcoholic inebriety is a moral disorder, a voluntary, wilful giving way to the lower passions of the human heart, the remedy of which is severe punishment by fines and imprisonment. The practical results of this theory indicate that it is a terrible error; that instead of checking inebriety it increases it, and destroys the inebriate. The armies of inebriates who are fined and imprisoned to-day for intoxication are brought up to-morrow for the same offence, and each effort to punish them precipitates them lower and lower, making recovery more impossible. The fatality of the practical application of this theory for the inebriate is even greater than the saloon. It has been estimated that ninety-eight per cent. of all persons who are arrested for intoxication and sentenced to jail will

be returned for the same offence within five years, and appear again with increasing frequency until death. In one thousand cases confined to Blackwell's Island for intoxication, nine hundred and thirty-five had been sentenced for the same offence from one to twenty-eight times before. The nine thousand persons sentenced for inebriety to Deer Island, Boston, in 1883, represented a little over two thousand cases, who had been repeatedly sentenced, each time being recorded as a new case. Testimony before the temperance committee of the English Parliament in 1882 indicated many cases that had been punished by imprisonment from seventy to two hundred times. It is evident that the present means of legal treatment increases rather than diminishes inebriety.

A clearer conception of the nature of inebriety will be apparent from some of the general facts concerning the action of alcohol on the body and mind.

The use of alcohol is always followed by an increase of the heart's action, and later by a corresponding diminution of the flow of blood. This increased heart's action is followed by unsteadiness of brain force and activity. The increase of the heart's action extends to all parts of the body, giving the appearance of greater power, then after a time lessened power and energy, until stupor comes on. In all men who use alcohol occurs this alternation of exhilaration and depression; and when this is repeated for years positive damage follows. First of all the senses become impaired, and this always darkens knowledge and misleads the judgment. This follows from the fact that accurate perceptions are wholly dependent upon definite and normal sensations. When the senses are disturbed and impaired perceptions are correspondingly disturbed, they are unable to present the facts to the mind as they are or as they really exist in the surroundings. The fine shadows, the uncertainties and doubts, which attend all human transactions, escape the notice of the inebriate, hence he imagines they do not exist. Hence the more alcohol he uses the more positive things appear: they have the quality and energy of absolute demonstration. He never doubts or hesitates. Such a man is a dangerous witness in criminal courts, because his defective knowledge has a morbid positiveness that often carries conviction. In reality an inebriate witness testifying to events observed while sober is more reliable than a sober witness testifying as to events observed while intoxicated.[1] The inebriate is literally in a state of anæsthesia, manifested by the rude grasp of the hand, a loud voice, and a certain exaggeration of manner, as if to assure himself of the reality of his senses. The sense of touch, of sight, of hearing, of smell, and the muscular sense all show disturbance, and point to a degree of paralysis, which manifests itself in illusions, hallucinations, and perversions, impeded articulation, staggering gait, and diminished functional and organic activity. This is literally paralysis in a degree, and extends to the control of volition.

[1] Dr. T. L. Wright, in "Inebriism."

No effort of will can remove or lessen these incapacities from alcohol. Weakness, prostration, and debility respond in some measure to the calls of volition, but paralysis from alcohol never. Hence the responsibility of the inebriate is lessened, and differs from that of all other narcotic states in direction and degree. It can be readily seen how impossible it is for the mind to receive accurate knowledge of events and persons exterior to it when the senses are obscured and imperfect; also when this degree of paralysis extends to the higher operations of reason and co-ordination, where both the facts and the conception of them are faulty and perverted. The co-ordinating brain-centres are enfeebled and cannot analyze the impressions of the senses, and this extends to those higher operations of the brain called morals. The paralysis of the lower ranges of brain activity quickly dulls and breaks up those fine distinctions of duty and the consciousness of right and wrong. It is a physiological law of growth and development that the highest elements of brain activity and power are formed last. This is called the character, the "moral" of the man, and from the use of alcohol it appears to be the first to suffer and be destroyed. The inebriate, like the man intoxicated, exhibits confused, halting ideas, and beliefs of morals, and his duties to his fellow-man. His ethereal sensibilities and conceptions of duty and obligations undergo a progressive degeneration, while the coarser organic operations of the mind and body seem but little disturbed. Hence the acts and thoughts that are supposed to be malicious and brutish indicate merely a suppression of the higher co-ordinating centres. This is seen practically in many cases where persons of refinement in thought and act, after the use of alcohol have become coarse in language and manner and brutal in conduct. Often the inebriate is amazed when told what he has said and done while under the influence of alcohol, showing how far he has been dominated by the alcoholic paralysis. But if the drinking has been continuous, he is unable to review his thoughts and acts, and both the mind and body undergo debasement that is fixed. Morally, mentally, and physically, he slowly or rapidily grows crippled and deformed. The inebriate is literally a moral paralytic, his intellect is disordered, and among the insane none are more dangerous, for the reason that he has no fixed mentality or conception of himself and his relations to others. He may before the use of alcohol have formed habits and conceptions of life that cling to him automatically, and thus be able to appear and act along the ordinary grooves of normal life. He may as a professional man or as an artisan or farmer pursue his avocation with reasonable success; but let some supreme crisis intervene, let some emergency throw him out of his automatic range of life, and his true state will be revealed. His damaged brain will be seen in the crimes and the insane confusion of all his thoughts and acts. From alcohol alone this conclusion is sustained beyond all question,—viz., that its effects on the brain and nervous system are anæsthetic and paralyzant. The heart, the senses, and then the higher brain-centres slowly succumb to paralysis, while the victim's capacity to

realize his true condition and adjust himself to it grows less and less. His conception of right and wrong, of duty, of obligation, and of responsibility, grows more and more confused. Often this is masked by automatism, and the victim may perform his daily routine in accordance with his surroundings, but he is a mere mental waif drifting at the mercy of his surroundings and the uncertain conditions of life. The mental incapacity of inebriates to reason clearly about their acts and the consequences of them is fully sustained by the facts of heredity. All statistics agree that over eighty per cent. of all inebriates are born with defective brains and nervous system. Their ancestors are inebriates, insane, epileptic, idiots, feeble-minded, neurotics, consumptives, and others who are diseased, and who transmit to their children either special disease tendencies or general constitutional defects. These classes are wanting in brain, health, and vigor; they are unable to bear the strains and drains of life, or adjust themselves to its changing conditions. If they do not inherit a special tendency to alcoholic disease, they have a defective brain-soil, from which disease springs upon the slightest exposure. As shown by their defective external appearance, the brain and nervous system are imperfectly formed, dwarfed, and incapable of acting normally. The effect of alcohol on such an organism must of necessity reduce it below the plane of healthy activity and responsibility. These are general principles that are beyond question in the field of scientific inquiry.

There are many special brain states which appear among inebriates that bear very intimately on the question of mental soundness and responsibility. First is the *trance state* or *alcoholic somnambulism*. This is a state more or less common, in which all memory of acts, events, and thoughts is obliterated. The victim goes about like a sleep-walker; he may do violence, commit crime, and have no consciousness of it after recovery. In this condition some governing brain-centre has temporarily suspended, and the mind acts automatically; his personal identity and consciousness of surroundings are destroyed. This condition can be determined independent of the statements of the victim,—a fact which he is unable to understand or control.

The second special brain state is *alcoholic epilepsy*. The dipsomaniac and periodical inebriate exhibits this peculiar phase of brain-disease. Here the drink impulse becomes a form of mania, that comes suddenly and impetuously over the mind, abolishing every obligation of duty or responsibility, and rendering the victim powerless to do otherwise than gratify this craving for alcohol. It is literally a brain and nerve storm, where abnormal action and force is expended violently, and followed by a period of calm. The victim is a pronounced maniac, incapable of sane thought or act at this time.

A third brain state is *alcoholic traumatism*, a condition of profound change and debility of the nerve-centres but little understood, which constantly seeks alcohol or other narcotics for relief. This condition dates from special injuries to the brain, from direct blows, or profound psychical impression,

and is followed by a progressive lowering of the brain activity. The effect of alcohol is to increase this state of exhaustion, and capacity to think and act sanely.

A fourth brain condition, more or less common in inebriates, is *general paralysis.* The use of alcohol is a symptom of organic disease that may be marked for a long time. The demand for alcohol is like a signal-flag of distress, indicating the progressive degeneration that is going on in the brain-centres. Sudden abnormalities of conduct and thought may occur any moment, although he may follow some accustomed line of act, and appear normal, yet a close observation will show the constantly increasing incapacity.

In a certain number of cases the use of alcohol to excess is a symptom of brain-disease, and some form of insanity, which remains masked as long as the spirits are taken. Such cases are masked under the semblance of health or ordinary sanity, but when carefully studied display delirious hallucinations and manias, that may assume great prominence at any time. These are some of the more prominent brain states which occur in a large proportion of inebriates and are not studied, unless the case comes under legal notice or to the attention of the specialists. A summary of some of these physiological facts would be as follows: *First.* The action of alcohol on the body and brain is always that of an anæsthetic and paralyzant. The senses are impaired, the brain-centres suffer, and grow more and more incapable of realizing the nature and consequence of acts and adjusting them to the changing condition of life. Every impaired state from alcohol impresses more permanently this state of palsy, and destroys the brain integrity or power of healthy action. *Second.* The action of alcohol appears in the higher brain-centres which control the morals and consciousness of right and wrong. All inebriates suffer from increasing paralysis of the moral faculties. *Third.* A very large per cent. of all inebriates are defective from heredity. They are born with constitutional tendencies to inebriety and other diseases. They are unable to think or act as other men, they have defective reason and control, and quickly develop disease and brain abnormalities, especially where the palsy of alcohol intensifies the degeneration. *Fourth.* Alcoholic somnambulism, alcoholic epilepsy, alcoholic traumatism, alcoholic paralysis, and alcoholic insanity are the most pronounced states of brain-disease and irresponsibility that may be present in some form or degree in nearly all cases.

A clinical study of these facts in many cases brings out the somewhat startling conclusion that the tendency to crime against both person and property is greater among inebriates than in the insane. Statistically this is true; of a hundred insane, not more than ten per cent. will commit crime; of a hundred inebriates, more than twenty per cent. will commit crime against both person and property. While the crimes of the insane are almost always against persons and are of violence, the inebriate is a low criminal, committing petty crimes against both person and property. The

inebriate has a constantly increasing bias or tendency to crime. This is explained by the paralysis of his moral nature and his ever-increasing confusion of duty and responsibility. He may appear to realize fully these higher controlling forces, but always fails to act or regulate his conduct by them. He will follow lines of conduct and assume obligations that lead to crime in the most unreasoning way. Crime is not committed with marked motive and purpose, but is merely the outgrowth of impulse, of the suggestion of the hour, uninfluenced by reason or design. The use of alcohol especially prepares the inebriate for criminal acts and thoughts, by removing all possible restraints and considerations, as well as all fear of consequences. His mind is so far palsied that experience has no influence; he is an exception to all, and his conduct differs from others, in his own estimation. He is the most perfect example of *free will* in a metaphysical sense ever seen. The insane may only exhibit disease in one direction, in all others they may be rational, but the inebriates display failure and disease in a marked way, and, unlike the insane, have no higher governing control. From these facts we are able to judge of the inebriate who appears accused of crime in the court-room. Up to a recent period the question of his responsibility was never raised. To-day a better knowledge of these cases demands a careful inquiry into the condition of the mind of the man who commits crime while under the influence of spirits. This inquiry cannot be limited to a history of the crime, but must include an exhaustive study of his heredity and life. The usual questions to be answered are, Did the inebriate or person under the influence of spirits at the time of the commission of the crime or matter in question realize the act and its consequences, and have the power to do otherwise? In other words, what were the mental condition and circumstances of the person at the time of the commission of the act in question? Was he sane? Was the act natural and rational under the circumstances? The usual method of answering these questions may be illustrated in the following actual case. John Doe shot a man who refused to give him more spirits. On the trial the State showed a motive, and the coolness of the act, and the absence of any excitement or delirium, or appearance of insanity. The act itself was studied minutely for signs of insanity and irresponsibility, which were wanting. The defence brought out a history of heredity and continuous abuse of alcohol for years, followed by a line of continuous unreasoning conduct, of strange impulsive acts, both with and without apparent motive, of marked impairment of physical and mental health; and urged that the crime was the natural outcome of the degeneration of his past life. Doe was convicted and hung. The error here was in limiting the inquiry to the history of the crime, and assuming that such a study would reveal the mental state of the person at the time. This matter is not to be answered by theories of law or science, the ruling of judges, or the theories of what inebriety is or is not. It is a question of facts and their meaning. A crime is committed, a will is contested, a contract is disputed, and the question of mental capacity and responsibility must be

determined. This can be done in no other way except by a grouping of actual facts and the conclusions which they indicate. In the same way that a crime is proven, it is the preponderance of evidence sustained by all the facts that indicates the truth. To begin any inquiry in this direction on the assumption "that inebriety is no excuse for crime or wrong-doing," and that "it is a moral condition for which the victim is more or less responsible," is absurdity. The claim of mental irresponsibility should receive the same study and scrutiny as an alibi, and be determined on the same character of evidence. This evidence should be taken by a medical commission appointed by the judge, who would report their conclusions and the facts on which they were based. On this decision the final adjudication of the case should be made. This commission should approach the question from a physical stand-point alone. If it was a criminal act, the inquiry should go back to his ancestors, and extend over his entire history to ascertain how far his criminality was the result of heredity, of disease, of defective growth and surroundings. If the act concerned property, the same history would throw light on the mind and its operations, and the probable state of health or disease at the time.

If the special crime in question was along the line of his previous life and living, or, if unusual, was still a natural sequence to his previous acts, its physical character would be clear. If the act in question was but a repetition of what he had done before, only less marked or prominent, the same inference would be sustained. As scientific men, the commissioners should begin the inquiry not from the act disputed or history of the crime in question,—these are only hints of possible clues to the real condition,—but from the heredity. Beginning with the ancestors, and their diseases, traits, and mental limitations, an outline view of the entire field of inquiry appears. For instance, certain family diseases go down from generation to generation; certain neurotic traits, mental defects, exaggerations, modes of acting, reasoning capacities and incapacities, appear in the children, with slight modifications, as positively as day follows night. When the act in question is along the line of these family diseases, the presumption of cause and effect is clear. Following up this line of physical inquiry, the facts of early growth, culture, neglect, dwarfing surroundings, and their influence on the mind appears.

Farther on the facts of diseases, injuries, degenerations, purposes and motives in life, failure and successes, diet, strains, drains, physical or mental work, and all the vast range of influences that gather and shape the thought and acts of each person, come into view as factors from which the health or disease of the brain must be judged. Finally, the general life-history of the case must be passed in review. This includes the moral, mental, physical, and actual course of conduct and thought, for all the past up to the act in question. From this chain of evidence the question of the act can be seen and studied. How far it is the natural sequence of his life-history, or the outgrowth of past defects, will appear. With this evidence,

the question of responsibility and capacity to act sanely at a particular moment or under given circumstances can be clearly solved, the question of how far he used alcohol to excess, and when, and under what special circumstances, and with what effects, also, what was the usual range of thought and conduct in the above inquiry.

Assuming the crime or act to have been committed, the commission from a study of the facts can form a very clear conception as to the actual condition of the person at the time of the alleged act. The province of this commission is simply to gather the evidence, and to point out the most probable conclusions which are sustained by such evidence. The question is one of preponderance of evidence, which, if it indicates defective consciousness of thought and conduct and impaired power of control, points to a state of general impairment of mind and degree of insanity. The limits of scientific study will not sustain theories of the exact degree of health and disease, and will not support assumptions of boundary-lines of responsibility and irresponsibility.

In all cases where the suspicion of mental soundness and capacity to act rationally comes up, two general questions and conclusions must form the basis of all subsequent study. First, was the person an inebriate or one who drank spirits to excess at all times or at intervals? If this fact is established beyond question, his sanity and mental capacity may be most reasonably and naturally doubted.

Second, what were the mental condition and the circumstances of the person at the time of the commission of the act in question? Was he sane? Was the act reasonable and just in its effects and consequences? If not, the first suspicion is strengthened, and the insanity of the person must be assumed, and the legal theory must be reversed; the sanity must be proven, not the insanity.

So far the discussion of this subject has been confined to its clinical aspects, in which the facts and these most probable conclusions have been considered. This brings us to some of the general principles on which the medical jurisprudence of inebriety must be built up.

The inebriate who appears in the criminal court is confronted with the legal dictum "that no drunkenness is an excuse for crime." If this is offered in defence, a state of delirium tremens, or a state of delirium clearly insanity, must be shown. Anything less is looked upon with suspicion, and the victim is punished. The object of the law in inflicting penalties on the inebriate is to reform the victim, and by fear and example deter others from committing similar crimes. Practically and literally, no reformation ever follows among inebriates who are punished for crime. Imprisonment and fines always make the inebriate degenerate and less able to recover. The influence of even capital punishment never deters other inebriates from committing similar crimes. The example of fines and imprisonment makes no impression, for the reason that these means appeal to the higher moral brain, that is so far impaired as not to respond to or recognize these influences.

The inebriate who appears in the civil court finds that no plea of intoxication is accepted as an excuse; he must suffer the consequences of his wrongs. It is assumed that all use of alcohol is voluntary, and if the man puts himself under the influence of spirits, he must accept the consequence of his conduct in this condition. This is literally an invitation and encouragement for designing men to take advantage of his mental condition in business matters for their own welfare. An inebriate who has wealth will always be the victim of imposition and wrongs for which there is no legal redress. Wills are written, contracts made, marriages contracted, which would not have been had the party been temperate and sane. Within a few years the great injustice of this has been recognized, and the law now permits proof to be offered (in contesting these matters) relating to the mental state of the person at the time of making the contract or act in question. The confusion of facts offered in such cases, and the wide differences of medical opinions, very often pervert justice and legal wrongs are committed. The legal recognition of the inebriate in court is for the purpose of adjusting the wrongs of his conduct and placing him where a repetition of such wrongs may be prevented. With few exceptions the courts have failed to recognize the inebriate, except as wilful and voluntary, and hence to be judged in the same way as any other culprit. This is an error which scientific study and practical experience make more and more apparent every day. A new jurisprudence of inebriety is demanded, a more exact recognition of the actual condition of the inebriate or man who uses spirits to excess, and the disabilities which follow such use. From these facts alone can the measure of responsibility and accountability be determined. The new jurisprudence of inebriety will require a scientific study of each criminal inebriate, and his capacity to enjoy the freedom and responsibility of a citizen be determined. If he has committed a capital crime, the treatment should not be a question of punishment, but one of permanent disability, and loss of all rights as a free responsible citizen. He should be confined in a military hospital especially provided for this class, and required to support himself by work under the control and constant care of the officials. If he should be expert in manual labor and have a surplus above what was essential to pay his way in the hospital, this should go to his credit or be applied to his family. In this way he could be a producer, and not a burden on the world. These life-sentences of inebriates who commit capital crime are to be permanent, but if the person recovers, he may be let out on parole depending on his good health and capacity to act rationally, but always liable to legal return to the hospital and hospital care. Every inebriate who takes life should be a *ward* of the State and cared for as a child, protected and built up in body and mind, and required to return to the State in labor the money expended for his care and living. A report of a medical commission on the history, character, and crime of the inebriate would be a permanent record, from which all future history of his life should be governed.

If the inebriate commits petty crime, the same medical history should be made, and the same isolation and sentence, not as a punishment, but for his personal protection and that of the community, the same as a small-pox case is quarantined for such a length of time as will promise recovery. The military hospital for these cases should be the same as for the others, combining medical and military care, providing and requiring labor from each one in return for his attention. The time of sentence should be based on the condition of the case, and the probable degree of restoration which would follow from this treatment. In *civil cases* the acts of inebriates should be held as *null* and *void*, and if the evidence shows that the parties with whom the contested acts were made were aware of the mental condition of the inebriates at the time, they should be held liable criminally for fraud and deception, and civilly, for damages. In all cases where the acts of inebriates are contested, and a medical commission decide upon the incompetence of the inebriate, he should be liable to be sentenced by the judge to a *military hospital* for treatment and protection. The parties who sold him the spirits should also be made responsible as accessories. The judge should hold all persons who in any way aid or abet the use of spirits in a man known to be a drunkard or inebriate as responsible. The jurisprudence of inebriety would carry this farther on, and demand that every one intoxicated should be placed under arrest, and detained in a receiving hospital, until the facts of his history were ascertained and the course of treatment and prevention determined. The seller of spirits should be held responsible for damages which his customers inflict on both person and property. A general license fund should be raised to build and maintain military hospitals for inebriates alone. This would be following the general principle that every business should be responsible and take care of the accidents which arise from it. Every dealer in spirits should come under strict legal surveillance, and every user of spirits be regarded with suspicion, and placed promptly under arrest the moment he exhibits signs of failure, or shows a disposition to use spirits continuously or at intervals to excess. The legal principle should apply here, that no one has a right to peril his health and threaten the interests of others by so doing. The intoxicated man on the street, or in his house, or at the club, is a maniac who forfeits his right to freedom of conduct and act. He has no more right than the small-pox or the yellow-fever patient, and he should be placed under the care and control of the law at once. This is the teaching of every advance of medical jurisprudence in the field of inebriety. Its practical character is assured in many ways. The military hospital could be built from the license fund, and supported by this and the labor of its inmates. The inebriate arrested for crime could be housed and made a producer, in justice to himself and family. The community would be protected from the contagion of his life and the armies of criminals that gather around him. The inebriate, like the insane, must be judged not from theory but from facts; his fitness or unfitness, his capacity or incapacity to realize and act

rationally, are questions that can be understood only from scientific study. This the jurisprudence of inebriety will do in the future fully and clearly. This is the new country along the borders of which a few pioneers are gathering. The present confusion of law, theory, and practice must disappear, and not far away, this vast, ever-widening topic of alcohol, its medical and legal relations, will appear in a larger, broader sense, and the medical jurisprudence of inebriety will approach that ideal land where truth and justice meet and blend. Some of the facts which have been presented may be grouped as follows:

1. The number of inebriates which come under legal notice is steadily increasing. The methods of treatment are practically failures in every sense.

2. Alcohol is a paralyzant on body and brain, acting upon the senses first, then upon the reason, and finally causing palsy of the higher brain-centres.

3. Many forms of alcoholic injuries occur, of which *trance*, *epilepsy*, *paralysis*, *traumatism*, *insanity*, are common.

4. Heredity, training, and surroundings are active forces which lead up to alcoholic excesses.

5. The continuous use of spirits numbs and breaks up the higher brain-centres, and all persons who use alcohol in excess have lessened and impaired responsibility.

6. The natural tendency of all persons who are damaged by alcohol is to lawlessness and crime.

7. The error of regarding all persons as sane who continually poison themselves with spirits results in an increase of crime and the production of a degenerate class. Courts and juries judge of these cases from theory and not from facts.

8. Such cases should be examined by a medical commission, and their conclusions should be final in the evidence.

9. Military hospitals should be built from the license fund and supported by the labor of inebriates sent to it for life or a period of years.

10. All inebriates should be regarded as insane and irresponsible and should be forced to go into military hospitals. They should be treated in the same way as cases of infectious disease are treated.

11. The medical jurisprudence of inebriety promises more for the solution of the alcoholic question than any other means.

THE SHURLY-GIBBES TREATMENT OF TUBERCULOSIS.[1]

BY E. FLETCHER INGALS, A.M., M.D.,
Chicago.

THE iodine and the gold and sodium bichloride treatment of tuberculosis, more commonly known as the Shurly-Gibbes treatment, originated with Drs. E. L. Shurly, of Detroit, and Heneage Gibbes, of Ann Arbor, in the fall of 1890, and was the outcome of numerous experiments which they made on animals. Owing to the furor created by the announcement that Koch had discovered a remedy for tuberculosis, some enterprising newspaper men, who had heard of Dr. Shurly's experiments, succeeded in obtaining from the report of the Medical Society of Detroit and from the Harper Hospital certain facts with reference to his researches; these facts, when amplified and illuminated by the brilliant imaginations of the reporters, made many columns in the daily press, which were sent out to all parts of the country. The craze over Koch's tuberculine kept alive the interest in Shurly's treatment, and caused numerous physicians in various parts of the country to give it a trial.

In the early part of January, 1891, I visited Detroit to investigate Dr. Shurly's method, and was so favorably impressed by the result of his experiments upon animals and the apparent improvement of a number of patients who had been treated upon the same principle, that I returned home, and at once began the use of these remedies with nearly all of my phthisical patients. Since that time I have treated in private practice over two hundred cases of pulmonary phthisis, many of whom have received this treatment. Not wishing to subject these patients to the chance of experiment, I carried out the treatment thoroughly, but only as an adjunct to other measures which were deemed suitable. Indeed, during all my subsequent use of this form of medication, it has been so associated, and therefore the results of the treatment cannot be ascribed wholly to the iodine, or the gold and sodium bichloride; however, the outcome of these cases has appeared so much more favorable than those treated by other methods alone that they seem to me worthy of record, and sufficient to give a fair basis for estimating the true value of this method.

In the beginning I recommended the treatment for nearly all patients, but after a short time I became convinced that it was of no great value in advanced cases, and ceased to employ it, excepting in cases which had not

[1] Read before the American Climatological Association, Richfield Springs, New York, June 23, 1892.

progressed beyond the second stage of the disease; as a rule, I have not since recommended it in cases where the disease had extended beyond the upper lobe of one lung, even though cavities had not yet formed. A considerable number of these patients I have seen but a few times, some not more than once, and in many instances only a few hypodermic injections have been employed; therefore only comparatively few of the two hundred cases can properly be considered in studying the effects of the treatment.

As nearly all patients suffering from phthisis consider themselves better, and often appear better, for the first two or three weeks under any new treatment, or that recommended by any new physician, I have excluded from my list, for analysis, all cases except those in whom the treatment was continuously employed for more than five weeks. Of these I find very complete records of forty-three, an analysis of which will, I believe, enable us to form a fair estimate of the influence of the treatment upon the progress of tuberculosis. Although the effect of other remedies cannot be excluded, I feel safe in the assertion that many of these patients have done much better than former experience would have led me to expect; and I believe these results are largely due to the tonic and alterative effects of the iodine and gold and sodium bichloride. I am confident that none have been injured by the remedies. In the following list I have presented all cases of pulmonary phthisis treated in this manner for a period of five weeks or more, without regard to the origin, stage, course, or result of the disease. Of the forty-two cases which I shall report many received no benefit; several were apparently benefited for a short time in a way that could hardly be accounted for by mental impressions; quite a large percentage were much improved for several months, and in eighteen per cent. the disease appears to have been arrested. I have classified as arrested all those cases in which the progress of the disease in the lungs has been checked for several months, in which the general health continues good, and the cough and other symptoms have nearly or quite disappeared. I think it probable in all such instances that careful physical examination would still reveal evidences of consolidation, though to much less an extent than when the treatment was commenced.

In some of this list of cases the diagnosis has been based upon the symptoms and physical signs only, there having been no microscopic examinations of the sputa, and a few have been diagnosticated as tubercular, even though microscopic examination failed to detect tubercle bacilli. In some of the cases, classified as arrested, the bacilli may still be found when purulent sputum can be obtained; in others it has been impossible to obtain sufficient sputum for examination, and in still others the bacilli cannot be found. The treatment has not appeared to me to destroy or change the appearence of these germs.

In order that each may judge for himself of the probable value of this treatment, I have given concise histories of these cases that I will not read, but which may be examined at your leisure. I have not classed any cases

as cured, believing that, in a disease like pulmonary tuberculosis, no patient can properly be counted as cured who has not been free from all symptoms and signs of the disease for at least two years.

REPORT OF CASES.

CASE I.—Not benefited. July 8, 1891. Miss F. B. C., aged twenty-one, ill five months. No hereditary predisposition. *Symptoms:* soreness in the chest, night sweats, cough, expectoration, and dyspnœa. Usual weight one hundred and seven pounds, reduced to ninety-three pounds; anæmic, strength fair; never had hæmoptysis, pulse 120, temperature 100° F. *Signs:* left lung in front; dulness from apex, descending as low as second interspace, with numerous mucous and subcrepitant râles extending from apex to base of lung. Posteriorly, similar râles, and dulness extending three inches below spine of scapula. Right lung and heart normal. Numerous tubercle bacilli in sputum.

This patient was treated eight weeks and received twenty-four injections, when it was deemed best for her to go to Colorado. The treatment was continued there for a time, but she died at the end of eight months.

CASE II.—Not benefited. April 24, 1891. Mr. M. H. W., aged twenty-nine. No hereditary predisposition. Patient had been ill one year, the disease having begun with pneumonia. *Symptoms:* cough and muco-purulent expectoration, amounting to about four ounces daily; weight reduced from one hundred and sixty-five to one hundred and fifty-five pounds; has had several hemorrhages; strength, appetite, and digestion fair; pulse rapid, frequent fever. *Signs:* left lung: feeble respiration over the entire lung with marked dulness, subcrepitant râles, and exaggerated voice-sounds. A large number of tubercle bacilli in sputum. Treated six weeks; received seventeen injections. Patient disappeared.

CASE III.—Not benefited. November 30, 1890. Mr. S. J., aged twenty-five. No hereditary predisposition; had pleurisy with effusion three years previously, and at the time I first saw him he had been sick for months. *Symptoms:* pain in the chest, failing strength, dyspnœa on exertion, and cough and expectoration; weight reduced from one hundred and fifty to one hundred and forty pounds; appetite fair; pulse 104, temperature 101.5° F. *Signs:* left side, slight loss of motion, and dulness and subcrepitant râles over greater part of anterior portion of lung; posteriorly similar signs, extending as low as the inferior angle of the scapula. Sputum not examined. About four months after the patient came under my observation, he was placed upon the iodine and gold and sodium bichloride treatment, which was continued for six weeks, but he received no decided benefit.

CASE IV.—Not benefited. September 15, 1891. Mrs. H. H., aged thirty. No hereditary predisposition; ill eighteen months. *Symptoms:* pain in chest, loss of weight and strength, dyspnœa, cough and expectoration; hæmoptysis ten days previously. Pulse 144, temperature 101$\frac{3}{4}$° F. *Signs:* larynx and trachea congested; right apex dulness as low as the second rib; left apex dulness as low as third interspace. Subcrepitant râles below left clavicle; numerous tubercle bacilli in sputum. Patient under treatment thirteen weeks; she received fifteen injections and apparently improved for a short time, but obtained no lasting benefit.

CASE V.—Not benefited. September 18, 1890. Mr. J. H. M., aged twenty-nine. No hereditary predisposition; had suffered an attack of pneumonia seven years previously, and had been a hard drinker for some years. Had been ill one year. *Symptoms:* pain in the chest, loss of weight and strength, cough and expectoration; pulse 130, temperature 100.2° F. *Signs:* dulness, subcrepitant and mucous râles over the lower half of left lung. About three months later the patient was placed under the Shurly-Gibbes treatment, which was continued for five weeks; during this time

he received twenty-three injections. Patient went to Texas, but finally returned and died a few months later.

Case VI.—Not benefited. March 12, 1891. Miss S. P., aged twenty-seven. No hereditary predisposition. Patient had suffered from bronchitis and influenza, and began coughing two years previously. *Symptoms:* weak, lost fifteen pounds in weight, strength fair, frequent cough with expectoration of a greenish sputum; two hemorrhages, appetite poor, pulse 96, temperature 99.15 F. *Signs:* left apex consolidation, which had progressed to the third stage; right apex consolidation beginning. She was under treatment six weeks; received eleven injections.

Case VII.—Not benefited. April 30, 1891. Mr. S. J. W., aged about fifty. Lost three sisters with consumption; had himself suffered from pneumonia four months previously; had been sick for four months. *Symptoms:* pain in right lung, loss of weight nineteen pounds, great loss of strength, night sweats, cough and expectoration of viscid yellow sputum, about two ounces daily, no hæmoptysis; appetite was very poor; pulse 120, temperature 100° F. *Signs:* entire right lung involved, especially the upper two-thirds; left lung normal, numerous bacilli in sputum. Patient was under observation seven months and a half, and received from ten to fifteen injections; he subsequently died.

Case VIII.—Not benefited. January 3, 1891. Mrs. M. W., aged twenty-eight. Ill eighteen months; one sister had died of phthisis; patient herself had pneumonia eighteen months previously. *Symptoms:* pain in left side, loss in weight thirty-three pounds, dyspnœa, cough, muco-purulent expectoration of about three ounces daily, no hæmoptysis, anorexia, pulse 112, and temperature 100° F. *Signs* marked. Sputum not examined. She was under treatment six weeks, and died about nine weeks after her first visit.

Case IX.—Not benefited. January 7, 1891. Mr. B. P., aged twenty-one. Lost two brothers from phthisis; no previous pulmonary disease; ill four months. *Symptoms:* loss of flesh, dyspnœa, cough and expectoration, poor appetite, one hæmoptysis. Pulse 100, temperature 98.25° F. *Signs:* left apex involved as low as fifth rib; right lung: feeble respiration over lower lobe. Sputum not examined. Was under treatment eight weeks and received thirty-one injections; died a few weeks after the last visit.

Case X.—Not benefited. July 7, 1891. Miss Z. H., aged 27. Several uncles and aunts had died of phthisis. Patient had suffered from pleurisy three years previously, and from influenza about ten weeks before calling upon me. *Symptoms:* pain over left lung, weakness, loss of weight from one hundred and forty-five to one hundred and fourteen pounds, night sweats, cough and expectoration of from one to four drachms daily; appetite fair, pulse 120, temperature 102.45° F. *Signs:* dulness, feeble respiration, and harsh respiratory sound over upper lobe of left lung, as low as fourth rib in front and fifth rib behind. Cog-wheel respiration all over left side, and feeble respiratory murmur over the lower lobe. Many tubercle bacilli in sputum. She was under treatment six weeks and received thirty-eight injections, but apparently not benefited. She then went to Colorado and was there under the same treatment for a time, but steadily failed, and died after a few months.

Case XI.—Not benefited. November 12, 1891. Mr. M. H., aged forty. No hereditary predisposition, or former illness. *Symptoms:* weakness, diminution of weight from one hundred and seventy-four to one hundred and fifty-seven pounds, night sweats, dyspnœa, poor appetite, cough and expectoration of from two to four drachms daily of muco-pus. Pulse 112, temperature 102° F. *Signs:* dulness over right apex as low as fourth rib, with broncho-vesicular respiration as low as the third interspace in front, and extending three inches below the spine of the scapula behind. Tubercule bacilli in sputum. He was under treatment six weeks, but received no apparent benefit. He then went West, where he probably died.

Case XII.—Not benefited. November 5, 1891. Miss L. S., aged twenty-four.

She had suffered no previous illness, but one sister had died of phthisis. *Symptoms:* failing strength, loss of weight from one hundred and thirty to one hundred and four pounds, poor appetite, night sweats, irregular menstruation, cough and expectoration of from two to three ounces daily of muco-pus; pulse 120, temperature 101° F. *Signs:* congestion and thickening of vocal cords, slight dulness, and broncho-vesicular breathing, as low as the third rib on left side and low as the third interspace on the right. Tubercle bacilli in sputum. Was under treatment about six weeks, but received only a few injections; died about four weeks later.

Case XIII.—Not benefited. June 6, 1891. Mr. B. J., aged twenty-one. No hereditary predisposition, and no previous pulmonary disease. Had been sick three months. *Symptoms:* dizziness, weakness, loss of weight from one hundred and twenty-three to one hundred and four pounds, dyspnœa, cough and expectoration of muco-purulent matter about one ounce daily, poor appetite. Pulse 118, temperature varying from 98° to 102° F. *Signs:* distinct dulness over right apex, as low as the third interspace, with a few subcrepitant râles all over the upper lobe of that lung. Slight dulness over left apex, and a few subcrepitant râles as low as the second rib. Sputum not examined. Was under treatment about five weeks, but grew gradually worse, and died about six months after he first came under my notice.

Case XIV.—Not benefited. January 28, 1891. Mr. H. D., aged twenty-four. No hereditary predisposition or previous disease. Had been sick about three months. *Symptoms:* pain in right side, cough, nervousness, anorexia, emaciation, night sweats, and fever. Pulse 106, temperature 101.15° F. Voice very hoarse, dyspnœa, cough and expectoration of about three ounces of muco-pus daily. There had been no hæmoptysis. *Signs:* congestion of the larynx and trachea, with dulness over right apex as low as second rib, broncho-vesicular breathing, and subcrepitant râles as low as second interspace. Sputum not examined. Patient was under treatment eight weeks and received thirty-one injections, but no apparent benefit. Left for the old country, where he probably died.

Case XV.—Slightly benefited. February 9, 1891. Mr. H. J., aged twenty. Father and mother both died of consumption. Had been sick five weeks when first seen. *Symptoms:* pain in the shoulder and side, headache, night sweats, weakness, and loss of weight from 140 to 130 pounds, pulse 90, temperature 98.25° at times, but frequently fever. Appetite poor, but digestion good. *Signs:* slight dulness and feeble respiration over left apex, as low as the second rib. Patient was under treatment seven weeks and received twelve injections, at the end of which time he had gained seven or eight pounds in weight. He, however, began to fail rapidly shortly afterward, and no doubt died within a few months, though I have not a record of the termination of the case.

Case XVI.—Improved for a time, but finally failed. December 26, 1890. Mrs. D. A. E., aged twenty-nine. Had been sick about three years, her trouble having dated from an acute pleurisy. Her mother died of consumption. *Symptoms:* occasional pain in the left lung, very despondent, nervous, losing weight and strength. Pulse 128, temperature 100.15° F. Hoarseness, dyspnœa, severe cough and free muco-purulent expectoration. No hæmoptysis. *Signs:* showed a large cavity in the upper part of the left lung, with marked dulness as low as the seventh rib, and subcrepitant râles over the whole lower lobe. Broncho-vesicular respiration at the apex of the right lung as low as the second rib. She was under treatment about seven weeks and received thirty-five injections. She was apparently much benefited at first, but at length began to fail and then went west, where she continued to grow worse until she finally died about nine months after her first visit.

Case XVII.—Improved for a time. December 29, 1890. Mr. E. P. F., aged twenty. He had been sick two months; no hereditary predisposition, and no previous pulmonary disease. *Symptoms:* pain in chest, loss of weight from one hundred and thirty-four to one hundred and twenty-four pounds, loss of strength, night

sweats, dyspnœa, poor appetite and digestion. No hæmoptysis; pulse 150, temperature 101½° F. *Signs:* dulness and broncho-vesicular respiration over right apex as low as third rib; over left apex as low as the fourth rib, with numerous subcrepitant and larger râles. Sputum not examined. Patient was under treatment seven weeks, received twenty-nine injections, and was apparently considerably benefited at first, but died within a few months after last treatment.

Case XVIII.—Improved for a time. July 9, 1891. Mr. M. M. J., aged sixteen. Two brothers had died of consumption; he had suffered no previous pulmonary disease. Had been sick two months. *Symptoms:* pain in right side, with loss of weight from one hundred and twenty-four to one hundred and twenty pounds. Very anæmic; night sweats, cough and expectoration, with poor appetite and digestion. No hæmoptysis. Pulse 96, temperature 99½° to 103° F. Physical signs showed involvement of right apex as low as the third rib, with broncho-vesicular breathing, and dulness in left supra-clavicular region. Sputum not examined. Patient was under treatment five months and was apparently much benefited, but after a time he began to fail, and with the coming on of bad weather went to Arizona. On the way he took cold, and continued to grow worse after he arrived at his destination. He remained there about two months, then returned, and died about four weeks after reaching home.

Case XIX.—Improved for a time. October 7, 1891. Mrs. K. J. F., aged twenty-four. No hereditary predisposition; had pneumonia three years previously. *Symptoms:* failing strength, loss of weight from one hundred and fifty to one hundred and thirty-five pounds, night sweats, dyspnœa, marked anæmia, cough and expectoration of muco-pus. No hæmoptysis. Digestion and appetite poor. Physical examination showed slight involvement both apices; numerous tubercle bacilli in sputum. Patient was under treatment seven weeks and was apparently considerably improved at first, but began to lose strength and then went west. She remained for three or four weeks in Nebraska, where she did poorly, and subsequently went to New Mexico, but grew continually worse, and finally returned at the end of three months, and died shortly afterward.

Case XX.—Improved for a time. May 27, 1891. Mrs. A. B. M., aged twenty-seven. One sister died of phthisis; patient had pleurisy one year previously. Had been sick eighteen months. *Symptoms:* loss in weight from one hundred and thirty-five to one hundred and eleven pounds, anæmia, dyspnœa on slight exertion, severe cough, and expectoration of about half a pint daily; pulse 114, temperature 101° F. *Signs:* right side in front, dulness as low as the fifth interspace, behind extending one inch below spine of scapula. Respiration slightly harsh over this dull region, and feeble all over the remainder of the lung. Left side in front, slight dulness as low as sixth rib, and behind extending down to the spine of scapula; feeble respiration all over the left lung, with a few subcrepitant râles. Sputum not examined. Patient under treatment twenty-two weeks, and received fifty-five injections. She seemed very much benefited for most of this time, but as the winter came on it was thought best for her to go to a different climate. She went to Arizona, but caught cold upon the way and did not regain her health, though she improved after a few weeks; but ere long she took the influenza, subsequently grew rapidly worse, and died after a few weeks.

Case XXI.—Improvement for a time. February 6, 1891. Mr. R. S., aged twenty-three. Had been sick for seven months; no hereditary predisposition, and no previous pulmonary disease. *Symptoms:* pain in the throat, cough and expectoration of purulent sputum, poor appetite, and loss of weight and strength. *Signs:* larynx congested and thickened, but no ulceration. Dulness and broncho-vesicular breathing as low as the third interspace on the right side, and similar sounds over the very apex of left lung. Numerous tubercle bacilli in sputum. Pulse 132, temperature 99½° F. Patient was under treatment eleven weeks, receiving thirty-three injections,

and was very greatly benefited; when last seen he was in better health than in the beginning, but I do not know the subsequent history of the case.

CASE XXII.—Improved for a time. January 8, 1891. Miss P. B., aged twenty-one. Had been sick three months. Her mother and one sister had died of consumption; no previous pulmonary disease. *Symptoms:* pain under the sternum, loss of weight from one hundred and twenty-eight to one hundred and twenty-four pounds. Strength fairly good, pulse 132, temperature 102° F., night sweats, dyspnœa on exertion, severe cough in the morning, with expectoration of light-greenish sputum in small quantities; no hæmoptysis. Appetite good and digestion fair. *Signs:* dulness over right apex marked as low as third rib, and broncho-vesicular respiration in the same region. A few subcrepitant râles over the lower lobe of right lung, and feeble respiration over whole of this lobe. No distinct signs on left side. Sputum not examined. She was under treatment five months and received sixty-five injections. Two months after treatment began it was noted that she was gaining strength, her pulse was diminishing in frequency, and her temperature was lower. Two months later there was less cough, but the temperature had slightly increased. About this time diarrhœa began, and continued in spite of any form of treatment. She gradually failed, and died after a few months.

CASE XXIII.—Much improved for a time. March 11, 1891. Mr. C. H., aged thirty-one. No hereditary predisposition, and no previous pulmonary disease. Had been sick six weeks. *Symptoms:* loss of weight and strength, with cough and expectoration of muco-pus. Pulse 114, temperature 98⅘° when first examined. Physical examination revealed distinct signs of consolidation as low as the second rib on right side, with feeble respiration as low as the fourth rib, and slightly enfeebled respiratory murmur over the whole right lung. Tubercle bacilli in sputum. Patient was under treatment five months, received thirty-three injections, and apparently was very greatly improved. The patient, however, knew that he had consumption, and had frequently stated that he would never die of that disease, intimating that he would take his own life. He called a physician suddenly one evening under peculiar circumstances seeming to indicate that he had taken aconite or some other violent poison, from which he died in about five minutes.

CASE XXIV.—Improvement for a time. January 31, 1891. Mr. K. C., aged twenty-four. No hereditary predisposition, and no previous pulmonary disease. He had been coughing for about four years. *Symptoms:* dyspnœa, weakness, chills and fever of three weeks' duration. Pulse 130, temperature 101° F. Physical examination showed marked involvement of right apex as low as seventh rib, and numerous tubercle bacilli in the sputum. Patient was under treatment fifteen weeks, received forty-four injections, and was apparently greatly improved for some time, being able to go on with his work, notwithstanding the severe epidemic of influenza, which for some time laid up four-fifths of the numerous other clerks in the office. Eventually the patient began to fail, and concluded to go west. A subsequent history of the case I have not obtained, but have no doubt it proved fatal.

CASE XXV.—Much improved for a time. October 11, 1891. Miss S. K. M. aged twenty-four. Her mother died of phthisis; the patient had suffered no previous pulmonary disease, but had been coughing for six months. *Symptoms:* pain in the chest, weakness, anorexia, loss of weight from one hundred and thirty-three to ninety-five pounds, night sweats, considerable cough, but no expectoration. She was markedly anæmic; pulse and temperature were noted as normal. Physical examination revealed much depression of the upper part of the sternum and infra-clavicular regions, but this had existed since childhood. Dulness over right apex as low as the second rib in front and behind, extending to the spine of scapula. Broncho-vesicular respiration and subcrepitant râles, with feeble respiratory murmur in the same region. Numerous tubercle bacilli in sputum. She was under treat-

ment for six weeks, received the injections regularly, and greatly improved in her general condition. With the coming on of the worst portion of the winter she went to the city of Mexico, where shortly after her arrival she took a severe cold, and from reports seems to have had pneumonia; at any rate she did poorly for a number of weeks, but finally began to improve. At present she is said to be gaining.

Case XXVI.—Mr. L. E. J. came under my care January 27, 1891. Much improved for a time. There was no hereditary predisposition. He had suffered previously with bronchitis, and had been sick for about two years. *Symptoms:* pain in chest, weight diminished from one hundred and fifty-four to one hundred and forty-nine pounds, cough and slight expectoration; never had hæmoptysis. Physical examination showed a small tubercular ulcer in the larynx, and consolidation of the right apex as low as the third rib. There were numerous tubercle bacilli in the sputum. He was under treatment five weeks and received forty-five injections, during which time he steadily improved, continuing at his work. When last seen, nine months later, he was much better than when he first consulted me.

Case XXVII.—Much improved for a time. August, 1891. Mr. M. S. J., aged twenty. A brother had consumption; the patient had suffered from bronchitis; had been sick four months. *Symptoms:* anorexia, emaciation, loss of strength, night sweats, cough and expectoration; never had hæmoptysis; pulse 102, temperature 101½° F. *Signs:* left apex, slight dulness above the clavicle with sticky subcrepitant râles and increased whisper resonance. Tubercle bacilli in the sputum. He was under my care seven months, receiving the injections quite regularly for four or five weeks, subsequently about two or three times per month; during this time he has very much improved, and when seen about two months ago was much better than at any time before, since he first came under my observation.

Case XXVIII.—Much improvement. July 10, 1889, Mr. K. L. J., aged twenty-six, came under my care. His father had died of some pulmonary disease, and the patient had been troubled with his present illness for two years. He was nervous, had lost some weight and strength, was short of breath on exertion, and sometimes had a severe cough, expectoration of about an ounce of yellowish matter daily. Never had hæmoptysis. *Signs:* dulness over left apex as low as the fourth rib in front, and behind over whole of left lung. Respiratory sounds feeble with râles, most distinct over the lower lobe of the lung, and broncho-vesicular respiration at the apex. Right lung normal. About the first of January, 1891, he was placed under the Shurly-Gibbes treatment, which he received regularly for two or three months, and since that time he has received the injections about two or three times per month, in all amounting to one hundred and six times. A large number of tubercle bacilli in the sputum. The patient has held his own during all this time, though he has not really gained, yet considering the nature of the disease it must be considered an improvement. He is still doing well.

Case XXIX.—Much improved. December 12, 1891. Miss D. N., aged twenty-eight. No hereditary predisposition or former disease of the lungs. She had been sick for one year. *Symptoms:* loss of weight from one hundred and ten to ninety-five pounds, very weak, hoarse, dyspnœa, cough, appetite poor, and fingers clubbed. The pulse was rapid, and she had a temperature from 102° to 103° F., had had two hemorrhages. *Signs:* slight depression over the right apex, with deficient movement and some dulness as low as the third interspace. In the same region broncho-vesicular respiration as low as the second rib in front, and extending one-half inch below the spine of scapula behind. On the left side respiratory murmur slightly harsh above the clavicle; no râles. Patient was under treatment six months, received forty-three injections, and was much improved; the fever disappearing entirely, and the cough almost ceasing. She is still doing well.

Case XXX.—December 16, 1891. Miss O. R., aged seventeen. No hereditary predisposition and no former disease. *Symptoms:* poor appetite, loss of weight and

strength, hoarseness, cough and a little expectoration. Never had hæmoptysis. Pulse 120, temperature 99° F. *Signs:* arytenoid cartilages much swollen, dulness over right apex as low as the second rib, very distinct above the clavicle. Exaggerated vocal resonance in the same region, with broncho-vesicular respiration above the clavicle; no râles. No tubercle bacilli were found in the sputum. She was under treatment for three months and apparently had nearly regained her health, though she still remained hoarse. During the latter portion of treatment she was under the care of her family physician. At the end of three months I advised that the injections be discontinued, but she speedily began to lose weight and strength, and they were then renewed with favorable results. At last report she was still doing well.

CASE XXXI.—March 17, 1891. Much improved. Mrs. M. R., aged twenty-one. No hereditary predisposition; had an attack of pleurisy about three months previously. *Symptoms:* soreness in chest, loss of weight and strength, hoarseness, and great dyspnœa on exertion; cough and expectoration of about four drachms of yellowish sputum daily. Had one hemorrhage two years previously, and slight hæmoptysis several times since. Appetite good, pulse 108, temperature normal. *Signs:* right arytenoid much swollen, with a papillary growth on its anterior surface; dulness and harsh respiration over the left apex, and numerous tubercle bacilli in the sputum. She was under treatment two months, but received the injections regularly for only a short time. She improved much, and at last accounts was doing well.

CASE XXXII.—Much improved. November 7, 1891. Mr. F. E., aged twenty-nine. No hereditary predisposition to phthisis. *Symptoms:* emaciation, hoarseness for the last two years, occasional slight expectoration of blood. Pulse 88, but said usually to be slower. Temperature ranged from 98.6° to 99.4° F. Dulness over right apex as low as second rib; broncho-vesicular breathing as low as third interspace, and a few sticky subcrepitant râles, with many tubercle bacilli in sputum. He was under treatment about three months, receiving, however, only a few injections. He gained several pounds in weight, and at the end of this time the temperature and pulse were normal; there was little or no dyspnœa, and but little cough.

CASE XXXIII.—Much improved. April, 1888. Mrs. W. N. N., aged twenty-six. No hereditary predisposition and no previous pulmonary disease. She had been coughing for about two months when first seen. *Symptoms:* pain in the upper part of the left chest, with slight loss of weight, and occasional cough and expectoration of from two to five drachms of muco-purulent matter; had a slight hæmoptysis six months previously. Appetite and digestion fair. Physical examination showed slight thickening of the arytenoid cartilage, with deficient movement of the apex of the left lung, and dulness as low as the third interspace. Broncho-vesicular respiration and exaggerated vocal resonance, with a few râles over the same area, and extending a trifle lower. There were also a few subcrepitant râles over the apex of the right lung. This patient improved under treatment, and finally appeared practically well; but at length, during the course of gestation, the disease was lighted up anew, and after confinement she ran down rapidly; cavities formed in the lungs, and at the earnest solicitation of her friends, though without the advice of her medical counsellors, she went to California. After a time she improved, but during her residence there she had an attack of what appears to have been tubercular meningitis, lasting for several weeks. She subsequently grew better, and spent the early part of the winter of 1890 and 1891 in Texas; but about the middle of January went to New Mexico, and near the first of February, 1891, began the Shurly-Gibbes treatment. She began to improve coincidently with the treatment, and steadily gained, making remarkable progress the next two months. She then went to Colorado and continued the Shurly-Gibbes treatment, the injections being given less frequently, for many months. She is still doing well. This was a desperate case when she went to California, and her improvement then had been phenomenal. When the Shurly-Gibbes treatment was commenced she was using about twenty handkerchiefs per day to receive

abundant muco-purulent expectoration, but at the end of two months a single handkerchief would suffice. Microscopic examination showed a large number of tubercle bacilli in the sputum. Although the benefit in this case must be attributed largely to the climate, yet the rapid improvement was coincident with the use of the Shurly-Gibbes treatment, and it has always appeared to me, as it has to her friends, that it had very much to do with the arrest of the disease. This is the only advanced case of tuberculosis in which I have seen any decided benefit which could be attributed to this form of treatment.

Case XXXIV.—Much improved. September, 1891. Mr. S. G., aged thirty-one, no hereditary predisposition to tuberculosis, and no previous pulmonary disease. Patient had been ill for several months when I first saw him, and had just suffered from a hemorrhage. This patient was under my care for three years before the Shurly-Gibbes treatment was commenced. In February, 1890, there was distinct consolidation of the apex of the right lung as low as the third rib. In June of the same year he was slightly improved, but in September was again worse. He returned to Chicago after a prolonged absence during the fall of 1891, and, desiring to remain in the city, I decided to place him upon the Shurly-Gibbes treatment. Numerous bacilli were at this time found in the sputum. His general health was fairly good, and his weight as great as at any time since I had known him. Treatment was begun on September 10, 1891, and continued, the injections being given about twice a week for several months. The patient apparently improved under the treatment, and was able to attend to his work all winter long. During the latter part of the winter he was so well that the treatment was discontinued, but he soon began to fail, and the treatment was renewed with decided benefit. He continued to do well until about six weeks ago, when he began once more to fail, and I now find that the disease had again been lighted up in the lung, so that I have directed him to seek a different climate.

Case XXXV.—Disease arrested. January 13, 1891. Mr. M. T. J., aged twenty-four. He had lost one or two aunts with tuberculosis, and had himself suffered from catarrhal pneumonia the winter previously, and had been sick for two months when I first saw him. Cough and expectoration of a considerable quantity of muco-pus, pulse 124, and temperature 100.38° F. No hæmoptysis; had a fairly good appetite. No examination of the sputum. *Signs:* right apex dulness and harsh respiration as low as second rib in front; similar signs behind, extending to within one inch of the spine of scapula; no râles. Feeble respiration over the lower lobe of the right lung, having only about sixty per cent. of the intensity of the left side. This patient was under treatment eleven weeks, and received twenty-four injections. At the end of the time he appeared perfectly well, and has so continued, with the exception of one or two slight colds.

Case XXXVI.—Disease arrested. February 17, 1891. Mr. B. W. J., aged twenty-nine. The patient had at this time been coughing for four weeks, and had recently raised blood; there was no hereditary history of tuberculosis, and he had never suffered from any previous pulmonary disease excepting bronchitis. The weight was nearly normal, strength fair, pulse 96, and temperature 99° F. The sputum, which amounted to about two ounces daily, consisted of muco-pus, and contained tubercle bacilli. *Signs:* loss of motion and dulness over left apex as low as second rib, with indistinct subcrepitant râles. He was placed under treatment several weeks, during which he received thirty-eight injections; at the end of this time he appeared perfectly well, and has continued in this condition ever since, with the exception of two or three slight colds, which have caused him to cough more for a few days at a time. Tubercle bacilli continue in the sputum, though his general appearance is that of a person in perfect health.

Case XXXVII.—Disease arrested. May 9, 1891. Mr. S. G., aged twenty-two. No hereditary history of tuberculosis, and no previous pulmonary disease. He had

been ailing for a year and a half. His flesh and strength remained good, appetite fair; there were no night sweats, but he coughed and expectorated about an ounce of muco-pus daily. Pulse 114, temperature 100.35° F.; no distinct dulness could be discovered, but there were occasional râles all over the upper lobe of the left lung. He was under treatment nine months, during which he received sixty-five injections. He gained much in weight and strength, and at the end of this time appeared perfectly well, and still remains in this condition, though at the last examination bacilli were still found in the sputum.

CASE XXXVIII.—Disease arrested. November 12, 1890. Miss S. R., aged twenty-four. Her father died of consumption. She had been sick about three months. *Symptoms:* pain in the chest, emaciation from one hundred and forty-five to one hundred and twenty-two pounds; weak, a hacking cough and muco-purulent expectoration; pulse 102, temperature 99½° to 103° F. *Signs:* marked dulness and broncho-vesicular respiration above the right clavicle. No microscopic examination of sputum. She was under my care for eight months, during which time she received only eleven injections, these being made at first about once a week. She received other treatment at the same time, as did all other patients, so that the effects of the Shurly treatment cannot be definitely estimated. At the end of the treatment she appeared perfectly well, and continues to be so at the present time, having gained in flesh and lost all fever and cough. Although the history of this case is not complete, yet those who saw her during the course of the treatment have no doubt of the nature of the disease.

CASE XXXIX.—Disease arrested. July 17, 1891. Mr. K. P. C., aged twenty-seven. There was no hereditary history of consumption. *Symptoms:* pain in the chest, cough, and slight muco-purulent expectoration, with dyspnœa upon exertion. Appetite fair, and strength good; pulse and temperature not noted; had suffered from six hemorrhages. *Signs:* dulness over right apex as low as the second rib in front, and behind extending two inches below the spine of scapula; marked broncho-vesicular respiration in the same region, and subcrepitant râles. She was under my care for seven months, during which time she received fifty-eight injections, and at the end of that time she appeared perfectly well, and so continues at present.

CASE XL.—Disease arrested. August 26, 1891. Mr. T. G., aged thirty-four. No hereditary history of tuberculosis. He had diminished in weight from one hundred and thirty-three to one hundred and twenty-eight pounds, but had a fair appetite and digestion; was troubled considerably with cough, but had only slight expectoration. Had raised four ounces of blood about one month previously. Pulse 73, temperature 99.25° F. *Signs:* harsh respiration over apex of left lung as low as the second rib, but no râles, and no distinct dulness. A large number of tubercle bacilli in the sputa. He was under my care for six weeks, during which time he received eighteen or twenty injections. He then went to Colorado, and the treatment was continued by Dr. Hart, of Colorado Springs. He slowly improved, and finally returned to Chicago in apparently perfect health, and so continues at the present time. In this case climate must be given some of the credit, but the patient himself attributes the beginning of his betterment to the treatment. The bacilli have disappeared from the sputum.

CASE XLI.—Disease arrested. December 23, 1890. Mr. N. E. C., aged twenty-seven. Hereditary history showed numerous deaths in the family from tuberculosis. He had suffered from pneumonia twelve years previously, and had been ailing four months when he first called upon me. *Symptoms:* pain in right side, with cough and free expectoration; strength and appetite fair. Pulse 102, temperature 100° F. There had been no hæmoptysis. *Signs:* dulness over the inner one-half of the right infra-clavicular region, with prolonged respiratory murmur and exaggerated vocal resonance, but no râles. Similar signs were obtained in the supra-scapular region of the same side. Numerous tubercle bacilli in the sputum. He was under my care for nine months, during the early part of which he received twenty-two injections, which

seemed to give him decided benefit. Sometimes he experienced a tonic effect from the injection for thirty-six hours after it had been given. At the end of the time he appeared perfectly well, and has so continued ever since, with the exception of two or three slight colds, lasting for four or five days each. He still continues in good health.

CASE XLII.—Disease arrested. January 14, 1891. Miss H. M., aged twenty-seven. No hereditary predisposition or previous pulmonary disease, but had been coughing for three months. *Symptoms:* pain in chest, weakness, fever, cough, and expectoration of muco-purulent matter. There had been no hæmoptysis. Pulse 78, temperature 99.35° F., but subsequently frequently as high as 101° or 102° F. All the symptoms indicated rapidly progressing tuberculosis. *Signs:* dulness over right apex as low as third rib, with harsh respiratory murmur. She was under my care thirteen weeks, during which she received thirty injections. At the end of the treatment she appeared well, and she continues so at the present time. In this case the sputum was not examined, but the symptoms and physical signs, as witnessed by my assistants and myself, leave no doubt as to the diagnosis.

Several others of those for whom I have recommended this treatment, who have been taken care of by other physicians, have apparently been much benefited by it. Three of these were treated by Dr. Walters, of Woodstock, Illinois, who reports very great improvement or arrest of the disease. I have not included them in this report. When I first began the use of the Shurly-Gibbes treatment, I gave it to all phthisical patients who came to me; but in many instances only one or two injections were given, and often the patient was not seen after the first or second visit, as many of them came to me from a distance, and soon returned to their homes.

An analysis of these forty-two case will show that fourteen, or one-third, received no apparent benefit, but it will also show that twelve of these were far advanced when they first came under my care. Fourteen others were apparently decidedly improved for some time, but they ultimately grew worse, and six of them have since died. Of the fourteen cases that were not improved, I believe that all are dead. Six of the forty-two cases are noted as much improved; all of them have been under observation for many months, and I believe that they are, with one exception, all doing well at present. Four of these when first seen were in the early stages of the disease, having been ill but a few months, and some of them will probably recover. Of the forty-two cases, eight are noted as arrested. All of them are at present in good health; though in those where the sputa have been examined recently, of which there are four, the bacilli continue to be present, and in all these four, and possibly in others, there is still expectoration of a small amount of muco-purulent sputum every day, amounting possibly to half a drachm.

It will be seen that whatever the results of the treatment may be, the tubercle bacilli are not destroyed, a fact which was established early by Dr. Shurly himself. During the last few months I have discontinued the use of chlorine as an inhalation, substituting it in most instances by inhalations of iodine, which has seemed to me more beneficial.

It will be seen by the analysis that in a little more than nineteen per cent. of the cases the disease has been arrested. In about fourteen per cent. the patients have been greatly improved, and in thirty-three per cent. they were

apparently benefited for some time, though they ultimately failed. It will be noticed, also, that nearly all of the patients who were not benefited were already far advanced in the disease when first given the treatment; and that the majority of those who have been treated in the inception of the disease have been greatly improved or have recovered. But it will also be observed that the treatment is not entirely valueless in some advanced cases. Considering these facts, I think that I am justified in believing that we have in the Shurly-Gibbes treatment for tuberculosis a method of great value in incipient cases, which adds much to their chances of recovery. I do not think we should rely upon it alone in any case; *but for myself I would feel that I had not done my patient justice if I had not given him the benefit of a trial of this treatment, providing the disease of the lung had not extended below the third rib when he first came under my observation.* While the treatment may occasionally prove beneficial in advanced cases, I would not recommend it to such patients, excepting where they desired to try it after the chances had been fully explained. In only one of the cases reported was a history of previous syphilis obtained, and this case was so clearly tubercular, that I did not hesitate to place it in this list; but it is at once apparent that where doubt as to the tubercular or specific origin of pulmonary disease existed, this would be an appropriate treatment for trial.

THE ELEMENT OF CHANGE, PER SE, IN THE CLIMATIC TREATMENT OF DISEASE.[1]

BY WILLIS E. FORD, M.D.,

Medical Director, St. Luke's Hospital, Utica, N. Y.

THE primary object of those interested in this Association is the collection of scientific data regarding the characteristics of air, soil, and general natural advantages of various portions of our own country, with the view of applying them in the treatment or management of disease.

In the early history of every country the conditions are such, as to the distribution of wealth, the need of universal industry, and, also, the absence of ready means of communication, as to preclude anything like climatic treatment of diseases. As communities become older and more wealthy, the proportion of those who are able to seek health in new climates rapidly increases; but the diseases incident to crowded populations, more artificial methods of living, and greater luxury much more than keep pace with the increase in number and wealth of the population. In the process of the

[1] Read before the American Climatological Association, Richfield Springs, New York, June 24, 1892.

development of the country those who suffer from lung troubles are probably first talked of as patients for climatic treatment; but in this country we have passed this stage of civilization, and a host of nervous troubles now confronts us that were comparatively unknown to our forefathers.

It is for this Association to speak authoritatively regarding the management of other than lung troubles, and, first of all, perhaps to decide whether any change of locality is beneficial to this class of sufferers. On the continent of Europe the well-organized resorts with hygienic establishments fostered by government aid are visited regularly by thousands to take the cure, as often a preventive as a curative measure. To take the cure at Ems, Wiesbaden, Baden, or at Kreutznach is looked upon as the correct thing in place of the American vacation, which is spent oftener in dissipating than in regaining health. That the time will come in this country when something like this social movement shall take place cannot be doubted, and the facts collected by this Association will undoubtedly have much to do in directing this movement.

The collecting and recording of such facts as shall give us a comprehension of the natural advantages of various localities must necessarily precede anything like practical climatic treatment of disease. That the first part has been most successfully begun is shown by the records of our meetings, and that the practical application of these facts has been satisfactorily made will be testified to by a large number of practitioners throughout the land. In the climatic treatment of disease, aside from the scientific data which must govern the physician if he would be of any real service to his clients, there must always come in the question whether any change from home surroundings can compensate for the loss of home itself, and also the question whether the mental peculiarities of the patient are such as to make it likely that *any* change will be beneficial. The element of change, *per se*, seems, therefore, worthy of special consideration.

The contemporaneous history of man furnishes abundant proof that in all ages certain diseases have been treated with more or less success by a change of climate. It is obvious that before the exact laws of disease were comprehended, and before anything like a rational diagnosis could be made, the question of change itself was about the only one that could have been of much importance. The accumulated experience and observation of men regarding certain localities tended in time to establish some sort of rule as to where invalids should be sent; but such rules, formed upon crude and unscientific data, could not have been of much real value. The mere removal of the patient from his surroundings into new ones must have been beneficial or otherwise, largely because of the personal peculiarities of the patient in each individual case. It is the same to-day with those who have but little information regarding the characteristics of the climate to which they send the sick, and yet the faith of the laity is such that where the circumstances of the patient will permit a suggestion of a change of climate this usually meets with hearty approval. I dare say the explanation of this

faith in change of climate is frequently nothing more than a feeling that the mysterious cause of the sickness may be escaped by removing to another locality.

With the physician it often happens that chronic diseases lose their interest, and, after patiently trying all rational means of relief, he advises a change of climate, in an ill-defined belief that something beneficial to the patient will turn up.

I am often asked by physicians whom I meet in consultation if a "change would not be a good thing," and I am led from observation to think that in the profession there is the general belief that chronic invalids are benefited by change of surroundings. This is, perhaps, analogous to the doctrine that a surgical operation, *per se*, is beneficial in certain cases. Acting upon this impression, for it can scarcely be called more than an impression, thousands of invalids are sent away from their homes every year to places not specially selected with reference to climatic conditions. Under these circumstances, what are the chances in favor of those who change, as compared with those who stay at home? On the other hand, carefully selected cases are every year sent by intelligent climatologists to the best climates, and fail rapidly instead of gaining. Is the effect of change more potent than the effect of the climate? Is it not possible to classify patients independently of their disorders, as well as to classify climates? I have sent patients into the Adirondacks with slight evidences of pulmonary trouble, and have had them return much worse in the fall, and they always have had a poor time while away. A few years ago in this region I saw at a camp a young man who had wintered in the woods, and who looked as if he would not survive many months. He was interested in no occupation, did not fish, though the sport was fine and near at hand. He had no companions, and, indeed, took little interest in anything. I asked the guides about him, and they said, "Oh, he is one of those city fellows that comes here and makes no effort to get out of doors, and he'll die." A year and a half later I asked a guide about him, and was surprised to learn that he was well, weighed one hundred and eighty pounds, carried a seventy-pound boat anywhere, and had no cough. I asked how it came about. "Well, he nearly died the second winter and could hardly crawl in the spring, but Sam. D. got him interested in sugar-making, and took him to the bush, and made him walk a little, and he got well." In this instance, perhaps, the natural limitation of the disease occurred about sugar-making time, and there is a scientific reason for the recovery other than the one that appears on the surface, namely, that a change in his mental state, which gave him some occupation, started him toward recovery. On this question, however, I should vote with the guides, even against an array of pathologists.

It is a matter of common observation that those who have recovered from phthisis or other wasting diseases are generally persons of more than ordinary mental endowment, and at least have more than the average fortitude to endure adversity without losing hope.

It would be interesting to know what part this fortitude played in the cure. On the other hand, many fail with but slight pathological changes, and, abandoning hope, are not benefited by any treatment. Such facts as these remind us that the influence of the mind over the body is such as to modify even the progress of disease, and to make the same treatment efficacious in some cases and of no avail in others.

The question as to whether mere change of locality will benefit an invalid is therefore determined by the mental attitude of the individual. If by removing the patient from his surroundings to others a hopeful expectancy of good can be made to take the place of despairing apprehension, then a possibility of improvement is established which did not before exist. But if the converse of this takes place, none of the natural advantages of climate can overcome the depressing influence of low spirits. While we are, therefore, trying to formulate rules regarding the climates desirable for invalids, is it not possible to formulate some general laws, based on the observation of the mental qualities of patients, that shall govern us in determining the primary question as to whether any change is permissible? In the first place, those diseases which tend to disturb the intellect are not likely to be acted upon favorably by climatic treatment. The possibility of benefit from change of scenery or air by travel presupposes an intellect that is well enough balanced to perceive the beauties of nature and to be diverted or pleased by the contemplation of new scenes. If one carries with him from place to place an unnatural depression in itself alarming, he must, indeed, be a strong-minded person to be able to rise above this constant reminder of his mortality, and to be able to be diverted, amused, or even occupied sufficiently by travel and by new scenery to maintain a cheerful and hopeful frame of mind.

Climate plays but a small part in benefiting those patients whose morbid sensations and apprehensions constantly chain them to the serious contemplation of death.

The element of change, then, can be considered solely in its relation to the mental impression it may make on the patient. If this impression be favorable, then the result will be favorable upon his general health.

The nutritive processes seem to be markedly influenced by the condition of the emotions. Mental worry will take off the flesh faster than work. The condition of the secretions is so influenced by strong mental impressions that in time actual structural changes may result. If a debilitated young person, who has as yet no sign of lung disease, but has an inheritance, the knowledge of which clouds his life, be sent to a suitable climate and there finds frequent examples of the dread consumption about him, the chances are that he will be endangered as much by the mental worry he will fall into as he will by any germs in whose way he may fall. Fortunately, consumption itself seems to be accompanied by a hopeful mental state in the vast majority of cases, so that the presence of those suffering even in its advanced stages makes no strongly unfavorable impression upon others. It

is this very fatuity or hopefulness that makes them believers in climatic treatment, and, in fact, believers in every new treatment offered. Every change which impresses the imagination favorably and leads to renewed effort on the part of the patient makes the condition of the body more favorable for the assimilation of food, the promotion of sleep, and, in short, tends towards his general welfare. Those who have written enthusiastically of the benefits of frequent changes of climate or of carriage-journeys have been recording the beneficial effects of pleasant mental diversion upon the nutritive conditions of the body. So, too, the writers upon the new methods of treating consumption have actually observed great benefit derived by their patients, and have sometimes announced a cure when, in fact, they only had a diversion. It must have been observed by those who have been much in the Adirondacks that the ozone sterilizes the lungs of one who likes to fish and to tramp much faster than it does the lungs of the long-faced sufferer whose only amusement consists in belittling the limited means his host provides for his entertainment. So far from being an argument against the climatic treatment of disease, these facts but suggest the necessity for a thorough knowledge of climatology as well as of a comprehension of the mental attitude of those who need advice. Persons who are sick for a long time and who move about much in search of health acquire for themselves an experience which must be respected by their physicians, though it does not always tally with the physician's preconceived notions. If we should limit this inquiry to a consideration of the cases in the first stage of consumption, and possibly, also, the second stage, we would have to admit that change itself, independently of the climate, seems to be beneficial. The amount of good derived must always depend upon the quality of the climate; but are we not in danger of underestimating the advantages of a change to comfortable surroundings near at hand, and of overestimating the climatic advantages of places at a great distance where the other conditions are less favorable?

Those of us who have seen much of the treatment of pulmonary troubles in private hospitals or in properly conducted sanitaria have been impressed with the improvement brought about by the change itself, seen before any system of medication could have entered into consideration. My observation leads me to believe that the hospital treatment of pulmonary troubles in the fall and winter months of this northern climate, for people with limited means, yields better results than are obtained by sending such invalids far away from home, even to the best climates, unless the change be intended as a permanent removal. The annoyances and hardships attendant upon poverty are not conducive to recovery from sickness in any climate, and, of course, they increase in proportion to the distance the sufferer has to travel away from his home. While the change itself might be of great advantage, the attendant expense may cause such anxiety as to outbalance the good. Nothing, however, speeds the progress of any chronic or wasting disease so much as the dull, uninterrupted monotony of neglect which banishes hope.

It occurs to me sometimes that eminently respectable and competent members of our profession are afraid of being accused of undignified or quackish methods if they depart from the time-honored and approved drug-giving mode of managing sickness, rather than to yield to or forestall the restless and despondent state of mind common to sufferers from chronic diseases, by prescribing changes in management which shall keep alive that hope without which drugs and even foods fail to restore strength. This is especially true of diseases other than those of the lungs. Take the whole range of symptoms, various groups of which make up the disorder known as neurasthenia or American nervousness, and exclude those cases which have marked mental obliquity, and the element of change, *per se*, is most vital in treatment. Overworked and anxious business men, fagged-out society women, over-ambitious and underfed students, professional men, all have about the same symptoms when they begin to break, unless they fall victims to some acute disease. The loss of sleep, mental irritability, unusual fatigue on attempting the usual work, which soon passes into dread of work, and, finally, an inability to do it without great mental distress and bodily fatigue, together with a myriad of physical sensations heretofore unnoticed, these are some of the symptoms for which physicians daily prescribe. The condition is more common than formerly, because all kinds of skilled labor are more specialized, and workers have more routine and less variety of thought. The pursuit of one line of thought, of research, or of study, no matter how noble the object may be, tends to wear thin certain spots in our brains, if I may use so homely an illustration, and the want of varied, broad, general, continuous culture narrows and belittles the man. There is a science that does not ennoble but dwarfs, and that is the narrow, highly-specialized science of to-day. Is it to be wondered at that such conditions favor the loss of mental equipoise, so essential to mental energy? These sufferers do not need rest, they need change. It is as essential to the restoration of mental vigor that unused faculties be used and developed, as it is that the overwrought faculties be given time to recuperate. Change, *per se*, does both. I have in mind cases of insomnia that defied the most judicious drug-treatment restored by a journey to a neighboring town for a few days. If inland dwellers can go to the sea, and sea-side inhabitants go to the country, and towns-people go to rural resorts, while the countryman goes to the city for even a brief respite from labor, so much the better. Climate is not so important as is the element of change. What has been said of insomnia applies with equal force to the other symptoms grouped with it. Nervous dyspeptics who have the discomfort of headaches and sleeplessness, and the to them alarming sensations of palpitation of the heart, whose emotions rise up to dominate the judgment and the will,—all these are benefited by change, *per se*. The introduction of new and pleasing sensations and the supplying of new ideas to a mind so long dominated by petty annoyances that the higher faculties have fallen into disuse will bring about a cure in the majority of cases.

I have in mind not a few instances of men well bred, of sound stock, good all-round students at college, who, on entering business, being confined to a small, dull routine, develop nervous symptoms within a few years that, if unheeded, lead on to complete mental wreckage; such men are not overworked in the sense that their best faculties are being constantly put to the test, but the keenness with which they pursue one narrow subject of thought tends to dwarf the better faculties of the mind necessary to the maintenance of a healthy mental state. Men pursuing a professional career are not so likely to break down from overwork, because all the faculties of the mind and the body may be properly exercised. For this other class, however, the remedy is change, both of the habits of the mind and the body. In these days, when we hear so much about breaking down from overwork, I have often wondered why so few leaders of campaigns in time of war, so few political leaders who have arisen to the position of real statesmanship, break down in a nervous way or go to pieces mentally. The truth is, the broad-minded man who exercises symmetrically all his mental and physical force rarely, if ever, goes to pieces with nervous disorders. The man I have just mentioned is the exception, and for the others, on the approach of nervous symptoms characterized by emotional disturbance without intellectual change, the safeguard and the cure is often change, *per se*.

The number of really sick women suffering from obscure pelvic disease who are cured by changing their ovaries from the pelvis to the laboratory is a matter of surprise to many of us to-day. But is it not true that the emotional disturbance which is often paramount to everything else in the case would have been relieved by a judicious change of the entire woman with all her organs intact? These women, sent to private hospitals, make surprising recoveries after surprisingly insignificant surgical operations. But, then, when we reflect that the charlatan and the faith-curist also restore a percentage of them, we begin to think less of the thing actually done and more of the change, *per se*.

If the emotions be sedulously cultivated for a long enough period, and bodily sensations be looked for and studied in the light of one's fears, while the judgment and the will are left without exercise, such wretchedness of spirit, pitiable helplessness, and such narrowness of mind come on as surely to wreck the strongest characters.

Before these conditions have proceeded too far a change of climate, of scenery, and generally of environment is of the first consideration. It has been fairly well established that atmospheric changes have a marked influence over certain nervous disorders, and that certain seasons appear to induce affections like chorea.

When actual mental disorder is coming on as the result of degenerative changes in the brain or in the blood-supply to the brain, then change *per se* cannot do good. It is a pity the fact is not universally recognized that actual mental disorder, melancholia, mania, or dementia, cannot be diverted back to health; indeed, that the process of diversion by change of surround-

ings is not only useless, but usually is harmful. Furthermore, it has not been shown by alienists or neurologists that climate exerts any influence over the causation or progress of any mental disorder. I have seen many a case of incipient melancholia and of mania sent away "for a change of air" with the most disastrous results. Indeed, I have never known any such case to do as well as they would have done by seclusion and by proper management at home. Unlike the administration of medicines, which may be expected to act the same, whether taken consciously, willingly, or unwillingly, the climatic treatment of disease seems to require intellectual assent and even cheerful acquiescence.

PROPOSED BASIS OF CLASSIFICATION OF THE MINERAL WATERS OF THE UNITED STATES.[1]

BY A. N. BELL, A.M., M.D.,
Editor of the Sanitarian, Brooklyn, N. Y.

MINERAL waters have been used from time immemorial as medicinal agents, but always with exceedingly variable effects, even in the use of the same waters and for the same diseases. This irregularity of action is to be accounted for by reason of the instability of some of the most important qualities. For, although water is the most universal solvent in nature, its operations in this respect are on very different scales, chiefly depending upon its temperature and upon the amount and kind of gases and acids it holds in solution.

The solvent power of water, when heated under pressure to a temperature above 212° Fahrenheit, is greatly increased, insomuch that the late Dr. Turner found that pieces of glass enclosed in the upper part of a high-pressure steam-boiler, worked at 300° F., at the expiration of four months were found completely corroded by the action of the water; that which remained was a mere white mass of silica, destitute of alkali, while stalactites of silicious matter, above an inch in length, depended from the little wire cage which enclosed the glass. This experiment aptly illustrates the conditions and the changes produced by the action of water confined at a high temperature in contact with various mineral substances in the interior of the earth. Pressure also exercises a marked influence on the absorptive power (the solution) of water, of gases independent of temperature. And this condition, probably more than any other, is made use of to the detri-

[1] Read before the American Climatological Association, Richfield Springs, New York, June 24, 1892.

ment, or at least to the change of quality, of mineral waters in common use.

Gases are soluble in water in very unequal quantities of the different gases at different temperatures. For example, at 32° F., one volume of water dissolves somewhat less than one-twentieth of its volume of hydrogen and exactly one-fiftieth of its volume of nitrogen, while it dissolves five hundred and six and one thousand and fifty volumes, respectively, of hydrochloric acid and ammonia. And again, at the same temperature, 32°, it dissolves 1.8 times its volume of carbonic acid, while at 62° it dissolves only half as much. Ordinarily, the greater the pressure the greater the quantity of gas absorbed. Gases moderately soluble in water follow a chemical law (of Henry and Dalton), according to which the quantity of gas dissolved is proportional to the pressure. But gases which are exceedingly soluble in water, ammonia, and hydrochloric acid, for example, do not conform to this law; these gases are soluble up to eight hundred or one thousand times their volume.

Salts generally are soluble proportional with the increase of temperature, but they deposit on the cooling of the water. There are some important exceptions, however, the most remarkable of which is that of common salt, which is about equally soluble at all temperatures. And a few there are—hydroxide and certain organic salts of calcium, for example—more freely soluble in cold water than in hot. And there are some salts so extremely soluble in water that they extract the vapor from the atmosphere and dissolve themselves in it. Such are the conditions common to mineral waters as they obtain everywhere.

Everybody knows that the most stable qualities of mineral waters are the easily ascertainable mineral substances taken up and held in solution from the geological strata from which the water springs or through which it has passed. But if the no less important volatile qualities, the temperature, by means of which the mineral substances are held in solution, and the kind and quantity of gases contained in it as it springs to the surface, are ignored in the too great haste to put it upon the market, it is a very imperfect imitation. Indeed, it is upon the continued presence, approximately at least, of the same temperature, kind and amount of gases, by which the water is empowered to hold the mineral substances natural to it in solution, no less than upon the mineral substances themselves, that its true therapeutical properties depend. Hence the difference in the effects of mineral waters partaken of at their source, and those designed to represent them, served in bottles.

Moreover, with reference to bottled waters particularly, in the effort of bottlers to replace the gases that begin to escape from the water at the springs, the moment it is relieved from pressure,—which it is difficult, if not wholly impracticable, to duly estimate,—it is frequently surcharged with carbonic acid to such a degree as to effect a change in its properties, insomuch that alkaline waters at the springs are not unfrequently acidulated

waters in the hands of physicians and their patients, liable to wholly different effects from the remedy intended. Besides, there are many people, and some of them physicians, who are so little acquainted with the properties of mineral waters that they estimate their freshness and excellence according to the amount of carbonic acid they appear to contain on drawing the cork.

Clearly such a classification of the mineral waters of the United States as will indicate all their properties and chemical constituents is impracticable. The following is submitted, with the belief that under the circumstances it comprehends at least a useful basis.

1. Acidulous Waters.—These owe their virtues chiefly to the presence of free carbonic acid gas, commonly due to the decomposition of iron pyrites in the crystalline rocks, by which sulphuric acid is formed. The contact of sulphuric acid with the carbonates liberates the carbonic acid gas, and this, being absorbed by the water, communicates its acid properties. The amount of carbonic acid must of course be in excess of that which is required for combination (forming carbonates or bicarbonates) with any chemical substances contained in the water; and the strength of the acidulous water is to be determined by the proportion of such really free carbonic acid only. Such waters greatly vary in the amount of their solid constituents, and thus different waters of this class also possess the properties of some one or more of the other groups, into which they may also be classified with equal propriety.

2. Alkaline Waters.—These are commonly distinguished by containing carbonate of sodium and free carbonic acid, with or without the presence of chloride of sodium, and sulphate of sodium also. Hence they may be alkaline sodic or acidulous alkaline, containing bicarbonate of sodium; alkaline muriatic, containing the chloride of sodium; or alkaline saline, containing sulphate of sodium,—all variable. In some cases the products of the decomposition of the silicates are chiefly sulphates and carbonates of the alkalies; and if the latter are abundant, they will, on account of their extreme solubility, render the water decidedly alkaline. And these are commonly highly charged with free carbonic acid,—as, for example, Vichy water. In the purest alkaline waters there are scarcely any solid ingredients except the carbonates of the alkalies. Alkaline waters are also not unfrequently met with both as thermal and cold springs.

3. Calcareous or Earthy Waters. These waters are characterized by the presence of the sulphates and carbonates of lime and other alkaline earths, frequently held in solution by an excess of carbonic acid. Sulphate of lime is the particular salt upon which the properties of these waters commonly depend, but most of the springs containing it also contain the carbonate of lime. These are the waters generally designated by the name "hard waters." The phosphate of lime is also sometimes found in calcareous waters, and, in the absence of an excess of the sulphates and carbonates, it is a valuable constituent.

4. Chalybeate Waters.—These waters are characterized by the presence of iron. The form in which it is found is, with rare exceptions, the bicarbonate of the protoxide, held in solution by the excess of carbonic acid with which the water is charged. Chalybeate waters are for the most part cold, although they are sometimes thermal. They are frequently strongly acidulous, from the large excess of carbonic acid which they hold. Upon prolonged exposure to the air the iron salt gradually undergoes decomposition and separates from the water as hydrated oxide of iron, the free carbonic acid escaping. The sulphate of oxide of iron is sometimes present in these waters, but in exceedingly small quantity; and "some of them contain a not insignificant amount of bicarbonate of sodium, and are therefore 'iron acidulous' springs; others contain Glauber salt (the maximum three-fifths gramme to the litre), and are therefore called 'muriatic acidulous iron springs.' Finally, some contain a certain amount of carbonate or sulphate of lime (maximum of two grammes to the litre): these are called 'earthy acidulous iron waters'" (Ziemssen).

5. Chemically Indifferent Waters.—This group comprises such waters as do not contain a sufficient amount of any chemical substance as to give a distinctive character, yet they seem to possess properties which give them some medicinal value. As no natural water has ever been found perfectly free from the solution of gases or other substances, extraordinary freedom from such substances suggests that such water may be partaken of in larger quantity with impunity, and that, on account of its greater purity, it possesses proportionately greater absorptive power, indicating its usefulness.

6. Saline Waters.—These are, for the most part, solutions of halogen compounds of the alkalies, commonly distinguished by the presence of a large amount of the chloride of sodium, or common salt. But they also comprise solutions of the chlorides of calcium, magnesium, potassium, lithium, and aluminium. And some are said to contain small amounts of the iodides and bromides of sodium, potassium, calcium, and magnesium, but in very minute quantities.

7. Sulphuretted Waters.—These chiefly depend for their properties upon the presence of sulphuretted hydrogen, and are commonly distinguished by their odor, independent of analysis. The sulphuretted hydrogen in these waters is formed by the oxidation of iron pyrites in contact with water. The sulphides of sodium, calcium, magnesium, and potassium are sometimes present in these waters, singly or together, but always in very minute quantities; as, indeed, the sulphuretted hydrogen—the amount held in solution by water or given off from it—varies from a mere trace to forty-two cubic centimetres in the litre. These waters are widely distributed, cold or thermal in various degrees.

8. Uncharacterized Waters.—This group includes all mineral waters whose properties are not sufficiently well known by analysis or otherwise to signify their properties.

CONGENITAL INDURATION OR TUMOR OF THE STERNO-MASTOID.

BY JUSTIN HEROLD, A.M., M.D.,

New York.

THE muscles of the human system, taking into consideration their exposed situation, are much less frequently associated with injuries and diseases than would be supposed. Their anatomical construction, their protection by integument, fat, and fasciæ, together with their power of resistance to well-known morbid processes, make the muscles a rare seat for injuries and diseases. Observation recently of a case of congenital induration of the sterno-mastoid muscle has incited me to report the same, together with a few facts occurring in the history of this affection, so very often overlooked or passed over as insignificant.

Some months ago I was summoned to treat an infant four weeks old, presenting a swelling, as hard as bone, on the right side of the neck. The history of its occurrence was supplied me by the mother of the little patient, which was her third born in the space of six years. She had been attended by a midwife at each confinement. The two first children were born in the natural way; the subject of this writing presented by a foot. After the mother had been in labor for fully sixteen and a half hours, the midwife seized both feet of the child in her hands and pulled with great force, until the head of the child became "stuck," as the mother expressed it. The midwife then took a short rest, after which she resumed her forceful methods, finally relieving the mother of the child, by actually pulling it from the point at which the head was engaged in the pelvis; the mother, in spite of this harsh treatment, was up and about her household duties on the fourth day thereafter; but the infant was not so lucky. After the lapse of three weeks the above-mentioned swelling was observed by the mother, who at the time ascribed it to the force used by her attendant in delivering her of her child. I examined the patient carefully, and found a swelling covering the situation of the right sterno-mastoid muscle in its entirety, quite as hard as bone; so much so that it appeared, on casual inspection and palpation, to be a dislocated clavicle; it produced no inconvenience whatever, no deformity, simply appearing as a hard swelling, and disappearing gradually in the course of eight weeks upon the daily application, externally, of equal parts of glycerin and tincture of iodine. I have observed this condition of the sterno-mastoid several times in the last ten years, occurring in infants born with a good-sized head and large shoulders, which necessarily make labor difficult, and assist in causing this affection.

Myosclerosis, or induration of the sterno-mastoid, appears either within a few days or a few weeks after birth. Its occurrence is not very frequent, it is always unilateral, and may occur on either side, but is more frequent on the right. The induration causes a limited swelling, occupying a part or the whole of the muscle; the contour of the muscle becomes apparent in this swelling, which extends from the clavicle upward to the mastoid process, presenting a noticeable condition. An admirable description of this swelling has been presented to us by Henoch in his work on "Diseases of Children." He describes the swelling "as a hard round, or band-shaped, nodular tumor, on the lateral aspect of the neck, corresponding to the anterior part at the sterno-mastoid muscle. Its size varies,—oftentimes as large as a pigeon's egg, but frequently much larger and elongated, so that I have occasionally found a large part of the anterior edge of the muscle hard and nodular, whence band-shaped projections ran into the adjacent parts of the muscle. Occasionally there are two or three isolated hard spots in the edge of the muscle. As a rule the upper half of the muscle is much more frequently affected than the lower, but in one case I found almost the entire anterior half of a cartilaginous hardness." A greater or lesser degree of pain may be occasioned by induration of this muscle, both on pressure and on movement; it may be absent or only occur at intervals. Redness and heat of the swelling have been conspicuous by their absence in the limited number of cases coming under my observation. To my mind the most noticeable features in these cases are the abnormal increase in the density and firmness of the structures, which become as hard as rock. In the majority of cases slight deformity exists; this may be noticed in that the child's head is not held straight while prone, but is turned to one side; usually the face is turned to the opposite side and the head to the affected side; this position, according to Professor Henoch, is not constant, and the younger the child the less frequent is its occurrence. Professor Henoch says that the youngest child affected in his experience was three weeks old, and the majority are from four to six weeks old; three cases occurring at the ages of three, five, and twelve months. As I mentioned at the beginning of this article that I observed no deformity in my case, it conforms to the idea of Professor Henoch, that the deformity is not constant, and appears more infrequently the younger the child.

What is the cause producing this induration of the sterno-mastoid muscle? It is undoubtedly established during the birth of the child, through traction on the head and shoulders. In difficult labors, the head, especially if large, may be caught at the superior strait of the pelvis, consequently any undue force expending itself on the neck of the child, whether it be manual or instrumental, is sufficient to rupture this muscle. Still, induration of the sterno-mastoid has been observed in cases in which labor was normal and unattended with any difficulty; cases in which neither manual nor instrumental aid was employed. Congenital diseases and constitutional taint have been advanced as probable causes, but this connection has not

been established upon close scrutiny of reported cases. It is evident that almost all the children affected presented abnormally at birth, rendering manual or instrumental aid through traction necessary; in other cases, by far the smaller number, it was found that although the children affected presented normally, still labor lasted a long time, necessitating forcible traction. In some of the cases a large head and shoulders delayed delivery; in my opinion, traction of the head and shoulders does the damage. The effect, consequent upon the cause, consists of a partial rupture or tearing of the fibres, or of certain fibres of the muscle, hemorrhage into the muscular structure, and an inflammation, followed by one of the local effects of inflammation, which is induration. Induration is the process of hardening, following inflammation in any structure, from any cause; in a few words, it is a chronic inflammation; the enlargement and hardening of the muscle being due to an inflammatory exudate. In cases of induration of the sterno-mastoid, there is no deposit of morbid structures, or degenerations of structure, consequently the composition and structure of the muscle are not materially changed. Induration of the sterno-mastoid is nothing more than a termination of the process of inflammation; the nutrition of the muscle being changed, forming an exudate, which organizes and forms the swelling and hardness observed in these cases; although the swelling may be partly due to the extravasation of blood and interference with its function, the consistency of the muscle is affected, as the result of a local inflammatory process. Professor Van Buren described the process very aptly, as "one of the characteristic features of chronic inflammation; especially does induration take place where constructive inflammation has been prevented from attaining its object in the healing of a breach of continuity; the nutritive material brought for the purpose of aiding repair remains unused in the form of new tissue-growth, more or less organized, which collects around the capillary vessels, furnishing the exudation. It is new tissue formation intended for repair, but diverted from its object. This increase in the numerical elements of the connective substance immediately surrounding the capillary vessels constitutes, as the term first employed by Virchow, hyperplasia, or a redundant tissue formation by elements which have been turned aside from their purpose. The use of this term serves to distinguish an increase in bulk caused by inflammatory induration from hypertrophy, which is a purposive overgrowth of an organ generally invoked by its increased use, the habitually increased functional activity soliciting constantly a larger supply of nutritive material. It is proper to notice that the new tissue growth which constitutes inflammatory induration is less perfectly organized than the more normal growth of cicatricial tissue; hence induration may be removed by absorption, by atrophy, or by retrogressive changes, such as fatty degeneration. Thus systematic pressure will cause the rapid disappearance of the embankment of induration surrounding a chronic ulcer of the leg." This description applies very significantly to induration of the sterno-mastoid. In the limited number of cases observed

by me I never noticed that suppuration occurred. Neither did I notice any permanent deformity resembling torticollis. According to my experience, the swelling and hardness constituting the induration disappear spontaneously in the course of a few months; the process of restoration of function in the muscle being a natural one,—namely, by absorption,—at most the tincture of iodine diluted with an equal quantity of glycerin may be applied externally, or, as recommended by Dr. Clarendon Rutherford, of Chicago, the external use of ungt. sod. iod.; potass. iodid. and vaseline, to produce gentle counter-irritation; slight friction may also be employed.

PAPILLARY FIBROMATA OF THE LARYNX IN CHILDHOOD, WITH THE EXHIBITION OF A PATIENT.[1]

BY J. E. BOYLAN, M.D.,
Cincinnati,
Professor of Laryngology and Otology, Woman's Medical College; Member of Staff of Presbyterian Hospital; Secretary of Section of Laryngology and Otology, American Medical Association, etc.

It is my pleasure this afternoon to present to you, in connection with some notes upon benign tumors of the larynx in children, a case which should be equally interesting to the general practitioner and to those who devote special attention to diseases of the throat, in that it illustrates most aptly the importance of the laryngoscope as a means of diagnosis in general practice.

The history of this case, as I could best obtain it from the boy's mother, is briefly as follows:

He is now ten years old, though, as you will observe, very small for his age, and has for some time past been subject to periodical attacks of asthma or labored breathing, accompanied by great hoarseness. These attacks his mother attributed to a severe cold acquired some four years ago, at which time he lost his voice completely for over a week.

In August, 1891, he was again attacked with excessive hoarseness, which grew steadily worse, and was followed by periods of dyspnœa, which soon became so frequent and severe as to seriously alarm her and cause her to consult a well-known physician of the city in which she resided. A diagnosis of asthma with heart complication was made, and appropriate treatment for that affection was instituted. The boy's condition, however, grew steadily worse, till in the latter part of January last he breathed constantly so hard that his wheezing was audible to those about him. He was brought to Cincinnati and a local physician was consulted, who also pronounced the disease asthma, associated with pulmonary affection, and treated him assiduously in accordance with this belief. As the asthma showed no tendency to

[1] Read before the Mississippi Valley Medical Association, October 6, 1892.

improve, however, he was sent on February 1 to the Cincinnati Hospital, where he remained for a period of two months. While at that institution, Dr. F. Forchheimer, who had been requested to inquire into the nature of the case, made a thorough examination of the patient, as the result of which he diagnosticated obstruction of the larynx, and ordered a laryngoscopic inspection, which procedure in an instant removed all doubt as to the nature of the case, by displaying a large polypus occupying the rima glottidis.

When circumstances brought the patient under my observation a few days later, I found him in a decidedly critical condition. On inspecting the larynx there was visible an irregular growth occupying the greater part of the chink of the glottis, so that it left a comparatively small space at the posterior commissure which permitted of labored respiration. The growth, which had its attachment in front, could be seen to be lobulated, and its irregular, cauliflower-like surface was covered with opaque white epithelium, presenting thus the picture of a papillary vegetation. It concealed the true cords entirely, with the exception of the cartilaginous portion of the left one, and, moreover, as its bulk appeared to rise higher in the chink on expiration, and to be depressed or sucked down on inspiration, it conveyed the impression that its attachment was beneath the cords. The drawing which I pass to you, though somewhat crude, serves very well to illustrate the position of the tumor and its relation to the adjacent parts. Although the patient could only produce a loud sound occasionally and with exertion, his efforts to speak in a whisper resembled not a little the interrupted speech which is characteristic of the labored expiration of asthma. His wheezing respiration at once attracted notice as he entered the room, and, upon inspection, if attention were not called to the larynx, his condition would certainly suggest asthma before anything else. Without entering here upon the question of differential diagnosis, we know that the symptoms caused by neoplasms in the larynx may resemble tracheo-bronchial disease so as to deceive for a long time, if the larynx cannot be inspected. In 1880 J. E. Moure[1] described another and very interesting case in which a papillary tumor of the larynx in a child three years of age simulated tracheo-bronchial adenopathy.

Posterior third of right cord is visible, and the back part of the chink of the glottis.

In the present case, the indication for the promptest interference was imperative. It is needless to dwell upon the dangers of stenosis of the larynx in childhood, whatever its cause, nor to point out that where the larynx is already obstructed to such a degree as to render breathing difficult while the patient is at rest, a mere cold, or the change of the position of a tumor, or both, may suffice to cause occlusion and sudden suffocation. Laryngeal literature furnishes quite a number of cases, in which the sudden precipitation of a fatal termination under similar circumstances was startling. Most of

[1] Ann. des Mal. d'Oreille et du Larynx, Paris, 1880, vol. vi.

the specimens of laryngeal growths in the Metropolitan Museum of London were taken from patients who died from suffocation. I regret that I am not able to present a specimen which Dr. Forchheimer kindly placed at my disposal, taken from a child whose sudden death occurred in this very way; for it furnishes a sufficiently tangible proof of the danger of delay in these cases.

With this danger in view, the first question to consider was the advisability of tracheotomy in this instance as a precautionary measure, for, to quote from Mackenzie,[1] "It must be clearly understood that if the endolaryngeal operation is not successful in these cases it is certain to precipitate tracheotomy, and that a patient who, though on the brink of suffocation, might have postponed the operation for several weeks, possibly for months, may require to have his windpipe opened in a few hours, or even sooner."

As I had the patient where he could be kept under the closest observation, I determined, after making the necessary preparations for tracheotomy and securing able assistants, to attempt the removal of the growth at once with the forceps, especially as I found that he behaved remarkably well during the inspection. Half a dozen attempts, however, which were usually frustrated, notwithstanding the utmost care, at the very instant when the blades were about to close upon the tumor, made it apparent that no amount of patience or dexterity would be likely to succeed till the excessive reflex sensibility, which the liberal application of cocaine had failed to allay, was overcome. The patient was now placed in front of an inhaler for some twenty minutes, and I watched him carefully for the next few hours. Upon the following day, finding that no perceptible change had taken place, I determined, before again attempting the operation, to render his throat tolerant by introducing a probe several times daily for the period of a week. This method was even more rapidly successful than I had anticipated, and within a few days I could touch the tumor with my probe at will.

On April 16 I operated for the second time and removed, with a modified Mackenzie's lateral forceps, over one-half of the growth, crushing it between the blades. The effect of the operation was as gratifying as it was prompt, in that it at once put an end to the dyspnœa, and the patient was for the time being safe. Upon inspection it could now be plainly seen that the growth had its attachment along the anterior half of the right cord, and that its bulk had inclined downward and backward into the rima glottidis, instead of protruding from beneath it. One week later I succeeded, with much greater difficulty, in removing a second smaller section, and within a day or two after the boy, who had up to this time been totally aphonic, was able to speak in a distinct and loud, though quite hoarse, voice, greatly to his own and his mother's delight. There now remained a flat pedicle extending along the anterior half of the right cord, thickest in front at the anterior commissure, where it involved the whole breadth of the band quite to its free edge.

---

[1] Diseases of the Pharynx, Larynx, and Trachea, p. 230, Morell Mackenzie.

As a complete restitution of his voice was quite probable, and the danger of injuring the cord with the cutting forceps would be great under these circumstances, I postponed the attempt at final obliteration; having busied myself with other work, I did not examine the patient again till after returning from a visit to Detroit, several weeks later, during which time I had determined to destroy the pedicle, if possible, with a delicately-constructed and properly-guarded galvano-cautery tip. When he again presented himself at my office, however, to my great surprise he answered the questions put to him in a voice from which every trace of hoarseness had disappeared. Upon examining his larynx the affected cord was seen to be quite clear, with the exception of a small, smooth, nodular elevation close to its anterior extremity. The pedicle had almost entirely disappeared, as does the base of an ordinary wart after its vitality has been destroyed. The patient returned to his native "heath." I saw him on Saturday for the first time in three months, and am happy to say that there is not the slightest symptom of recurrence. His cords, though somewhat thickened, are quite free, and his voice is as clear as upon the day of his discharge. Although we have neither the time nor the facilities for an examination here, I should like very much to have those colleagues who saw him before or after the operation look at the condition of his vocal cords at present, and I shall be very glad to send him to any gentleman present who is sufficiently interested to care to see him.

As regards the occurrence of neoplasms in the larynx in childhood, it is fortunately very rare. Although the period during which the laryngoscope has been in use is but brief, statistics have definitely established this fact. In pre-laryngoscopic times, tumors within the larynx at any age were rarely recognized, and, when so, usually post mortem. Thus, in the year 1854 Mittendorf[1] could bring together only sixty-four cases from all literature known to him on the subject up to that date: thirty odd years later Felix Semon, of London, could, within a short time, collect ten thousand seven hundred and seventy-four[2] cases of benign growths alone. Professor Bruns, of Tübingen, is believed to have extirpated the first laryngeal polypus with the assistance of the laryngoscope in 1861: within the next thirty years a mass of statistics has been accumulated, from which we can gain most valuable information as to the nature of these growths and the frequency of their occurrence.

Thus, from the earlier statistics we may learn that, among one hundred cases operated upon by Sir Morell Mackenzie,[3] and tabulated by him in 1871, but five per cent. occurred in children under ten years of age, two of these being congenital; of two hundred and one more collected and tabulated by the same author at the same time, but nine, or less than four and a half per cent., were in children under ten years of age.[4]

---

[1] Die-Galvano-Kaustik, Breslau, 1854.

[2] Schmidt's Jahrbücher, Bd. 234, No. 5, p. 190. [3] Op. cit. [4] Op. cit.

Under date of the present month, I am in receipt of the following statement from Professor Schrötter, of Vienna: "In the last ten years we had fifty-six thousand four hundred and ninety-eight patients in my clinic. There were thirteen hundred and twenty-three children under ten years of age, and among these ten (eight boys and two girls) had benign neoplasms,—papillomata. There occurred two hundred and thirty cases of benign neoplasms in all: of these, two hundred and twenty were in adults."

Although it might be misleading to infer, even approximately, the per cent. of cases occurring in children from these tabulations alone, or to do so even after including other large ones which agree with them in the main, they suffice to show the comparative rarity of the affection in children.

In our own country, benign tumors of the larynx in adults are by no means of frequent occurrence, as our laryngologists testify, while in children they are almost a curiosity. I have here a letter from Dr. Solis Cohen, of Philadelphia, who, as most of us know, has had an enormous experience in the treatment of diseases of the throat, in which he writes: "I have had few cases in children, none of which were malignant,—possibly a dozen cases in all: not many in a laryngological practice of more than a quarter of a century."

By far the most frequent form of benign neoplasms of the larynx in adult life is the papilloma; in children we rarely find any other recorded. Gerhardt,[1] in 1871, found in the literature fifty-six cases of laryngeal neoplasms occurring in children. Of these, one was a cyst, one an epithelioma, four were fibromata, five were uncertain, and forty-five were designated as papillomata. It has been pointed out, however, that the indefinite nature of the term papilloma is probably in some measure responsible for the great preponderance of this form of laryngeal growth, in that, in the wider sense in which the word is employed, it is made to comprise any benign tumor which is developed by the excessive growth of papillæ, without regard to its basement structure or parenchyma. It is probable that a closer adherence to a more accurate classification would somewhat reduce this preponderance.

That neoplasms of the larynx are at times congenital has been demonstrated by a number of authentic cases, and it is further claimed that, as a laryngeal examination in children under five years can rarely be obtained, many cases are probably overlooked, and that among the record of deaths from false croup, suffocation, œdema, etc., a certain number are quite possibly due to neoplasms. In the *Revista de Ciencias Médicas*, Havana, September 5, 1889, Dr. Desvernin gives a summary of all the cases of congenital laryngeal polypus which he has been able to find in the literature: they number sixteen.

That spontaneous retrograde change may occur in papillomatous growths, we have on no less authority than that of Virchow, but the instances in

[1] Lehrbuch der Kinderkrankheiten, Tübingen, 1871.

which laryngeal polypi have been known to disappear in this way are extremely rare. One case is reported by Zwick,[1] in which four excrescences upon the vocal cords underwent spontaneous retrograde change after tracheotomy for severe dyspnœa.

In a paper read in the Section of Laryngology and Otology at the convention of the American Medical Association, June, 1892,[2] Dr. J. A. White, of Richmond, has further enumerated six authentic cases, in which spontaneous cure occurred after tracheotomy,—his own case being, he claims, the sixth on record,—while, in the *International Archives of Laryngology and Rhinology*, tome v., No. 3,[3] Dr. Max Thorner, of Cincinnati, has reported a unique case, in which the gradual atrophy of a laryngeal neoplasm—apparently a fibroma—occurred, which atrophy was not preceded by any operative interference.

Regarding the recurrence of these growths after operation, on the other hand, statistics are plentiful, at least in reference to adult cases, and establish beyond a doubt their tendency to return.

Statistics upon this point confined to children are naturally more rare. Of seventeen such cases in Paul Bruns's[4] tabulation of 1879, in which thyrotomy was performed, eight were cures and nine recurrences; of twenty-six available cases in children from the same tabulation treated by the endo-laryngeal method, thirteen were cures and thirteen recurrences.

Dr. Carl Stadler,[5] in a dissertation published within the last few months, reports six cases occurring in the surgical clinic of Dr. König, of Göttingen, in which thyrotomy was performed upon children for the removal of laryngeal papillomata, and he further enumerates thirty other cases of laryngeal papillomata in children under twelve years of age occurring in the literature since the tabulation of P. Bruns, in 1879. Of these thirty-six cases seven died without operation,—usually of suffocation,—two died of pneumonia, and one of croup after thyrotomy. Of the remaining twenty-nine available cases which were operated upon, recurrence is noted thirteen times and death from recurrence twice. Both of these tabulations, then, show a recurrence in about one-half the cases operated upon.

The age, finally, at which endolaryngeal manipulation can be undertaken must vary much with the nature and intelligence of the patient. It is pretty generally conceded that under five years of age even inspection with the laryngoscope is not successful: there are, however, so many exceptions to this rule that an attempt to examine the larynx should always be made when occasion requires. In patients of from five to ten years of age operative procedures are, it must be confessed, unsuccessful in the majority

---

[1] Badelbenche Klin. und Charité Ann., Berlin, 1882.

[2] Journal of the American Medical Association, October 22, 1892.

[3] Dic. Laryngotomie zur Entfern. intra-lar. Neubild, Berlin, Hirschwald, 1878, S. 211.

[4] Mult. Papill. des Keblk. bei Kinder, Inaugural Dissertation, Göttingen, 1892.

[5] International Archives of Laryngology and Rhinology, tome v. No. 3.

of instances. During the ages of youth and adolescence, on the other hand, —the period when these growths are most frequent,—cases are extremely rare in which tolerance to manipulation, as well as to inspection, cannot be acquired by a little practice.

It is not intended to convey the impression that when such tolerance is acquired endolaryngeal operations are always successful, for other conditions, such as the location and shape of the growth, are occasionally barriers to success; but the instances in adult life in which these growths cannot be removed in this way are the exception, while the number of cases in children which are relegated to the more unfavorable operations of thyrotomy has been greatly diminished.

DISCUSSION.

Dr. Homer M. Thomas, of Chicago.—I have been deeply interested in Dr. Boylan's paper. I wish to speak particularly upon the tolerance that can be established in the larynx. My experience coincides with that of the doctor to the extent that cocaine is not satisfactory to enable us to make a thorough examination. Of course, it produces a temporary anæsthesia of the parts, but practically the better way is that of instrumentation as pursued by the author. My experience is identical with his, and the degree of intelligence on the part of the patient has a great deal to do with the success of the method. However, almost all patients can be taught to tolerate the introduction of an instrument into the throat. I think the doctor is to be congratulated upon his management of this case, and the very excellent result obtained.

Dr. M. Thorner, of Cincinnati.—The remarks of the author regarding the rarity of benign tumors in children are certainly true. However, statistics are in this case as little reliable as they are regarding other matters. In fact, it seems as if these cases occur really more frequently than one would be inclined to think from studying the literature of this subject. The reason for this is that a great many cases occurring in children are either not reported or not recognized by the practitioner. They pass for all possible ailments in private records and those of hospitals, no laryngoscopic examination ever having been attempted.

It was my good fortune to see three cases of benign tumors in children under ten years, among a total number of twenty-one cases. This, of course, does not prove anything towards establishing any unusual frequency. I may not see a single case in the next twenty-one or forty-two cases. One was the case of a fibroma, mentioned by the reader of the paper. The others were typical papillomata. In one the attempted operation could not be done, the child dying from an intercurring attack of diphtheria. In the other child, about eight years of age, the papilloma was situated in the anterior angle of the cords, and very similar in appearance to that described by Dr. Boylan. I had great difficulty to train the child sufficiently for the exhibition of instruments, but finally I succeeded in removing the tumor in

one sitting by the aid of Voltolini's Sponge Instrument. The rest of the tumor disappeared without further interference, as this happened with Dr. Boylan's case also. This is probably due to a superficial necrosis of the histological elements composing the tumor, caused by the rough handling with instruments. It is quite a common occurrence, so that, as a rule, I have discontinued the use of caustics of whatever kind after the removal of laryngeal neoplasms. Recurrence, of course, is very common; but this frequently takes place in tumors of other parts of the body also,—for instance, in the warty and papillary neoplasms of the skin.

Regarding the diagnosis of these tumors, we must, to a certain extent, rely upon the clinical appearance. Everything that clinically appears to be a papilloma I am in the habit of calling so. Histologically, of course, a papillary body is requisite for such a diagnosis. The so-called pachyderma verrucosa, though sometimes impressing us as a papilloma, is certainly no true papilloma. However, we cannot in all cases make an absolute distinction from the laryngoscopic image alone.

Dr. Boylan, in conclusion.—I merely wish to add a few words regarding a possible confusion of the symptoms of asthma and those of laryngeal neoplasms. A laryngologist would not be likely to make such an error, because he would be sure to examine the larynx upon the slightest suspicion, —possibly even as a matter of routine. Quite different, however, might it be with a general practitioner, who would naturally seek an explanation of the condition in a much more likely cause, especially if the symptoms pointed that way. As a matter of fact, laryngeal neoplasms were very rarely recognized before the laryngoscope came into use.

I feel sure that in the majority of cases the symptoms would be so distinctive as to render a confusion of the two impossible; that it may occur, however, this case and the one cited show. I can imagine a combination of symptoms that would point so strongly towards asthma that the alternative of a laryngeal neoplasm would probably never occur to the physician. Dyspnœa caused by laryngeal neoplasms may be paroxysmal, as we know; dry râles or bronchitis might easily coexist. The symptoms of a growth in the larynx are often more dependent upon its location than its size: thus, a very small tumor projecting from the edge of one of the cords, so as to prevent apposition, may cause aphonia; while a large tumor, which has become pediculated and grows up into the vestibule of the larynx, may interfere very little with speech. Again, a tumor located beneath the cords, by being forced up into the rima on expiration, might give rise to the very symptoms which are characteristic of asthmatic breathing,—namely, labored expiration and a speech which is apparently deficient from want of breath.

As regards the accurate classification of papillomata, I purposely avoided the subject, as there already exists much confusion, to which I do not care to add my mite.

REVIEW OF MEDICINE.

MEDICINE.

IN CHARGE OF JUDSON DALAND, M.D.,

Instructor in Clinical Medicine and Lecturer on Physical Diagnosis and Symptomatology in the University of Pennsylvania, Assistant Physician to the University Hospital; Physician to the Philadelphia Hospital and to the Rush Hospital for Consumptives.

ASSISTED BY

JOSEPH P. TUNIS, M.D.,

Philadelphia.

Some Practical Difficulties arising in the Diagnosis of Phthisis Pulmonalis. (*Lancet*, London, October 22, 1892, p. 931.) By Dr. W. S. Lazarus Barlow, M.B. Camb., M.R.C.P.

The greater part of the paper is devoted to a consideration of minute points in making a diagnosis. The most difficult class of patients to decide upon will always be those in the incipient stage; it is sometimes impossible to differentiate a bronchial catarrh from early phthisis. In such cases it is of special importance that the bodily temperature be taken regularly, not only night and morning, when it will very likely prove to be normal, but especially in the middle of the afternoon. If the temperature rises in the afternoon from two to five, but is not elevated above the normal night temperature in the evening, or only slightly, the probabilities are greatly in favor of the tubercular condition. Next, the patient should cough while the examiner is auscultating, and the effect be noticed. The long inspiration following the effort of coughing will very possibly clear up the râles which in such a patient are heard during ordinary breathing. If after repeated coughs with subsequent deep inspiration, and after several auscultations, these râles remain, the probability of phthisis is increased. Then the condition of the two lungs should be carefully compared. If there is no dulness, if the moist sounds may be heard equally low on both sides, if the degree to which they are heard varies from one day to another, and if an occasional râle may be heard at the bases, then the probability is in favor of bronchial catarrh. If the sounds are not heard equally low, and particularly if the left apex be more involved, there is increased fear of the condition being phthisis. In a doubtful case it is important not to allow a patient who has had this condition in early summer to enter upon the next winter without carefully arriving at a definite conclusion as to the actual condition of the chest. When the patient is examined in the autumn and nothing is found, there can no longer be any doubt as to the correct diagnosis.

Dyspeptic Headache: A Historical Sketch. (*Lancet*, October 22, 1892.) By Dr. Harry Campbell.

The intimate sympathy between the head and the stomach was well known to the ancients; thus, Galen alludes to the vomiting which may follow fracture of the skull and to the headache which may result from gastric disturbance. Galen attributed the headache resulting from gastric disorders, first, to the numberless nerves which, passing from the head to the stomach, allow any gastric disturbance to be readily felt in the head, notably disturbances arising from the presence of yellow bile. Second, to indigestion causing certain irritating humors and vapors to pass from the stomach to the head,—"For the head does not only ache when it is itself diseased, but on account of the stomach, which transmits the vapors of morbid humors." It is a remarkable fact that these views are fundamentally the same as those held at the present day.

The modern theory is that morbid states of the alimentary tract affect the head in consequence (1) of nerve-currents streaming upward, and (2) of the accumulation in the blood of poisons resulting from indigestion. These substances the ancients regarded in the light of morbid humors and their vapors, while we call them ptomaines, leucomaines, and nitrogenous excreta. They recognized as clearly as we do the existence of something, which, travelling about the body, exercises an injurious effect upon it. Nor does the harmony between the views of the ancients and those held to-day end here; they, too, attributed a greater influence in the production of head troubles resulting from gastric disturbance to the "morbid humors" than to the gastric system. It was for men of a later age to lead us for a while into the error of regarding the nervous factor as the more effective of the two, and perhaps it is not to be wondered at that, just when the functions of the nervous system were beginning to be understood as they had never been before, its importance in this respect should have been unduly emphasized for a time.

The Treatment of Typhoid Fever by Means of Systematic Cold Bathing. (*Medical News*, November 26, 1892, page 589.) By Dr. J. C. Wilson.—This article is a further report in regard to the treatment of this disease as pursued in the German Hospital. It is the only treatment employed, and all the patients suffering from this disease are submitted to it, except cases that are moribund on admission, or those that are brought to the hospital during or after the third week. In sixteen months, one hundred and sixty cases were treated. The total number of deaths was eight, or a mortality of five per cent. Relapses occurred eleven times; multiple relapses once. In the first series of cases, previously published, the average number of baths was forty-two, the smallest number ten, the largest one hundred and thirty-eight. In the second series of cases the average number of baths was about forty-four, the smallest one, and the largest number one hundred and forty-nine. The average number of days in the hospital

of the non-fatal cases was about thirty-five. The patients ranged in age from thirteen to forty-two years.

If the patient was admitted before the tenth day of the disease a laxative dose of calomel from seven to ten grains was administered, which might be repeated if necessary. Otherwise, the treatment of the cases conformed strictly to the method of Brand. Occasionally strychnine was administered as a cardiac stimulant, or an opium suppository to control troublesome diarrhœa. The death-rate at the German Hospital has been reduced nearly fifty per cent. by employing this treatment.

THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,
Professor of Therapeutics, McGill University, Montreal, Canada.

ASSISTED BY

D. I. EVANS, M.D.

Hydrastinin in Epilepsy. (*Vratch*, No. 20, 1892.)—V. G. Kiseleff finds that intravenous injections of hydrastinin distinctly lower the excitability of the brain-cortex in dogs and guinea-pigs, and prevent or mitigate epileptic fits induced by absinthe. He also tried the drug in six cases of epilepsy in man. It was administered internally in doses of from one-fifth to one-half grain in solution, three or four times a day. In four of the cases the fits decreased both in frequency and intensity. In the remaining two, the effect was less noticeable. No unpleasant accessory effects were noticed. Dr. Arkhangelsky ("St. Petersburg Inaugural Dissertation," 1891, No. 59) showed that this alkaloid possessed powerful antispasmodic properties, and suggested its use in epilepsy and strychnine-poisoning.

Salipyrin in Acute Rheumatism. (*Vratch*, No. 18, 1892; *British Medical Journal*, July 30, 1892.)—A. L. Trechtenburg has used this drug with excellent results in eleven successive cases of acute articular rheumatism. It was given in fifteen-grain doses five times daily. In one case of an unusually severe nature salicylate of soda and antipyrin had been previously tried in vain, but under the use of salipyrin all the inflammatory symptoms subsided in a few days.

The Value of a New Coca Base, Benzoyl-Pseudo-Tropein (Tropacocaine), as a Local Anæsthetic. (*British Medical Journal*, August 20, 1892.) By Arthur P. Chadbourne, M.D., of Boston, U.S.A.

This is a new alkaloid, recently isolated, by Giesel, from the leaves of a "small-leaved coca-plant" of Java, and its chemical constitution and properties thoroughly studied by Liebermann. It can also be prepared synthetically. Actual experiment has proved the drug a powerful local anæsthetic, resembling, but not idential in local action with, cocaine. The

writer has instituted a series of careful experiments on its physiological and toxic action on cold- and warm-blooded animals. The experimental work was done in the Pharmacological Institute of the University at Berlin. His conclusions are summarized as follows: The most important differences between the action of tropacocaine and cocaine on animals are probably the following:

1. Tropacocaine is less than one-half as toxic as cocaine.

2. The depressing action, both on the cardiac motor ganglia and the heart-muscle, especially the latter, is much greater with cocaine.

3. Local anæsthesia, both of the eyes and skin, is much more quickly complete with tropacocaine, and is possibly of longer duration.

4. Slight hyperæmia is occasionally present, but quickly disappears, while with cocaine only ischæmia is seen.

5. Mydriasis is usually absent, but always seems to be less than after cocaine.

6. Solutions of tropacocaine are moderately antiseptic, and retain their strength for at least two or three months.

Tropacocaine has been given a very careful trial in Professor Schweigger's ophthalmic clinic, with the following results: Complete anæsthesia was produced more quickly by it than with cocaine in the same strength solution. No harmful symptoms of any kind were seen. For rapid operations it seemed preferable to cocaine. Painless tenotomy has been performed in less than half a minute, after applying a three-per-cent. solution.

The Urine in Poisoning by Sulphonal. (Urine dans l'intoxication par le sulfonal. Soc. de Phys. et de Chimie de Vienne. *La Médecine Moderne,* July 23, 1892.) By M. Jolles.

The author has examined the urine of four women presenting symptoms of poisoning by sulphonal, taken in the dose of one-half grain to two grains a day, to which dose two of them succumbed. The red-brown coloration is due to the presence of hæmato-porphyrine, which in a hydrochloric or ammoniacal solution presents its special reaction with the spectroscope. He has not been able to establish clearly the presence of hæmato-porphyrine in the circulating blood. In sulphonal-poisoning the urine contains appreciable traces of albumin, morphological elements, and small quantities of unaltered sulphonal. The largest portion of the sulphonal is eliminated under the form of soluble sulphurous acid. The administration of sulphonal must be discontinued at once on the urine showing any discoloration by the hæmato-porphyrine.

Cold Baths in Pneumonia and in the Typhoid Fever of Children. (Les bains froids dans la pneumonie et la fièvre typhoide des enfants. *La Médecine Moderne,* August 4, 1892.)

M. Levestre, at a meeting of the Société Médicale des Hôpitaux, strongly advocated the use of cold baths in the pneumonias of children. He claimed

that after each bath he noticed lowering of temperature and diminution in the frequency of the pulse and of the respiration; especially was there to be observed a cessation of the restlessness and of the delirium. Defervescence, instead of taking place suddenly, was in a manner heralded for a day or two, by a lowering of the temperature. It almost always took place before the seventh day. The baths were given at a temperature of 25° C. or even 20° C.; they lasted from ten to fifteen minutes, and were repeated four or five times a day. Cold baths may also be of service in broncho-pneumonia, even when it is secondary; but in the latter case, although the temporary results were beneficial, the malady generally terminated fatally. Still, under cold baths, he thinks he has seen some cures on which he had not counted.

In typhoid fever in children he thinks cold baths generally useless, on account of the mild course the disease as a rule assumes. In grave cases, however, they may be employed, but their use requires strict supervision on account of the enfeeblement of the heart met with in such cases. The writer has often noted ill effects follow their employment, and, on this account, rather deprecates their use in the typhoid of children.

NEUROLOGY.

IN CHARGE OF CHARLES W. BURR, M.D.,

Pathologist to the State Asylum for the Insane, Norristown; Visiting Physician to the Home for Incurables; Visiting Physician to St. Joseph's Hospital, Philadelphia, Pa.

Angeio-Neurotic Œdema. (*Amer. Jour. Med. Sciences*, December, 1892, p. 654.) By Joseph Collins, M.D.

This paper is a critical study of the subject, based upon the cases already published, upward of seventy-five in number, with several heretofore unreported. The author concludes: 1. That there exists a variety of œdema attended by such striking characteristics of its own that we are justified in referring its origin to the nervous system. 2. The seat of the manifestation of the lesion is probably in those vessels and lymphatics which pass through the corium to the subdermal tissues. 3. It is probable that although the lesions or the irritants on which the disease is dependent may attack other parts of the system, yet the result directly appears through the sympathetic system. 4. Evidence concerning the bearing of trophic influences in the production of the disease cannot be produced; but when trophic changes do occur, they are more plausibly attributed to the changes brought about by the oft-recurring œdema, *per se*, than to influences exerted through the nervous system as true tropho-neuroses. 5. It is quite possible to believe that in the future its causation may be attributed and shown to be dependent upon products manufactured and ordinarily disposed of within the system, but which, acted on by sinister influences, either inherited or acquired, result in the temporary disturbance of the vasomotor system,

which is manifested in various parts of the body, depending, as does the analogous condition of the distribution of blushing and flushing, upon structural peculiarities, either central or peripheral, or upon inherited predilections. 6. This œdema has a close relationship to the many œdemas spoken of, and also a family relation with many of the arthropathies as yet not well understood, but known to be directly caused through the agency of the nervous system. 7. It must be admitted from clinical evidence that the affection in question has a family relation with other vasomotor neuroses, such as exophthalmic goitre and urticaria.

Insanity in Early Childhood. (*University Med. Mag.*, January, 1893, p. 248.) By Wharton Sinkler, M.D.

The author reports three cases. The first followed an epileptic fit, occurring when the patient was three and a half years old. She is extremely restless and never quiet, swears and does everything bad that she can. She is absolutely unteachable. She talks and sings a great deal and is very noisy. During the two years she has been under observation she has had several epileptic fits and occasional attacks of acute mania, during one of which she seized a kitten and killed it. There was no relation between the epileptic attacks and the periods of mental excitement. She died in a convulsion when about seven years old.

In the second case the disease followed immediately after a severe fright, when the patient was about two and a half years old. She is unruly and excitable, and cannot be left alone with other little children lest she hurt them. She bites and tears her clothing, is dirty in her habits, and disobedient. She repeats continually the phrase "baby had a book," but uses no other words. After many months she improved greatly in all respects, but still remained somewhat excitable and easily irritated.

There was no discoverable cause in the third case except the possible existence of petit mal. The disease appeared at two years and two months. The first symptom was nocturnal restlessness, with spells of causeless crying, followed by loss of power of articulate speech, lasting a few minutes. She is dirty in her habits, and will even eat her own fæces. She talks and walks well, but is very destructive. She sleeps badly, and often at night is found talking to imaginary companions. She frequently masturbates.

Sulphate of Sparteine as a Remedy for Tremors. (*Therapeutic Gazette*, June 15, 1892.) By Charles S. Potts, M.D.

The author was led to use sparteine from having seen tremor cease in a case in which the drug was used because of cardiac trouble. In one case of cerebral syphilis, in which specific treatment relieved all symptoms except tremor, marked improvement in that particular followed the addition of sparteine to the treatment. Improvement followed its use also in three cases of neurasthenia, two cases of old hemiplegia, one of locomotor ataxia, and one of meningitis following sunstroke. A case of long-standing pa-

ralysis agitans was treated without benefit. The effect of the drug in these cases depends upon its action as a depresso-motor. In the senile and neurasthenic cases, with weak hearts, part of its action may be due to stimulation of that organ, and hence the improvement in the circulation.

PEDIATRICS.

IN CHARGE OF T. M. ROTCH, M.D.,
Assistant Professor of Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

ASSISTED BY

E. M. BUCKINGHAM, M.D.,
Instructor in Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

Comparative Measurements of the Liver in Health and in Disease among Children of Different Ages. (H. Douchez, formerly *Interne* at the Hôpital des Enfants. *Revue Mensuelle des Maladies de Enfance*, September, 1892, p. 410.)

Little has been written on the normal measurements of the liver and their pathological variations during infant life. The clinical measurements are relatively easy to make, and to practising physicians are of more importance than a knowledge of the various diameters and the weights. These last can never serve as a means of comparison between the conditions of health, of functional derangement, and of serious pathological changes. It is not possible clinically to determine the absolute dimensions of the liver, because of its being surrounded by resonant viscera,—the lungs and intestines. Clinical measurements are, however, of value if they show a regular progression according to age, their variations depending simply on passing troubles of digestion. The author quotes from Vogel, of Dorpat, and gives the description of clinical examinations which he has adopted.

Physical examination of the liver is made in children exactly as in adults. Percussion in the axillary and mammary lines determines the measurements of the right lobe, and percussion in the vertical line through the sternum that of the left. Restlessness in little children makes this determination difficult. Generally we cannot hope to establish the influence of respiration on these measurements before the age of three. The mammary and axillary lines are the only ones upon which Douchez believes percussion to be of practical use. He has often, in cases of considerable hypertrophy of the liver, failed to find any evidence of increase in its posterior face, by means of percussion on a vertical line drawn through the scapula. He believes that there are three causes of error in examination, that are of especial hinderance in children. They are excessive resonance of the thorax, resistance of abdominal muscles, and distention of the stomach

and intestines by gas. The most insidious source of error is the extreme resonance of the thorax, above all in the newly born.

In spite of care, measurements on the living are commonly a little less than on the dead. This statement the author proves by a table showing the result of many observations. Nevertheless, although giving less liver dulness than similar examinations after death, these results in the living represent really the impression given to the finger and the ear, and the error, if it be one, is reproduced uniformly and proportionally at all times. In certain cases, indeed, the demarcation of the upper and lower borders of the liver by percussion may leave doubt in the mind. Then it is well to employ palpation in aid of percussion. When the lower border extends abnormally low, palpation immediately below the false ribs encounters a certain resistance, provided the child will relax his muscles. If, on the contrary, he holds himself tense, the finger meets with a certain resistance, and if this be found, it is well to repeat the observation two or three times in the same place. Percussion serves better than palpation to define the slender edge of the liver, which is easily displaced. This thin edge may be resonant to percussion, because of its thinness and of its relations with the intestine. This remark applies even to percussion on the edge of the liver of the cadaver, after the abdomen is opened. The child is best examined upon his left side, the arm being raised, the hand grasping the bed, and the left flank supported on a pillow. Percussion should be made on both the mammary and axillary lines; the two observations serving as a control upon each other, for the upper line of dulness is practically on the same horizontal plane upon each of them.

In order to best show the relation of measurements, the writer has grouped his observations into three classes: (1) measurements on the cadaver before and after opening the subject; (2) measurements on the liver of the living in health; (3) measurements of the liver of the living in disease.

The author presents a table of eighty-eight minute observations. He finds that in the greater number of infectious diseases, including even measles and diphtheria, it is not uncommon to find enlargement of the liver, due probably to incomplete elimination of poison in these diseases. He arrives at certain conclusions:

(1) The exact determination of the liver borders in children is difficult, because of involuntary contraction of muscles, of the resonance found over the thin lower edge, and of the oblique position of the upper border. (2) The measure of dulness of the anterior face of the liver on the living is almost always less by one or two centimetres than the real measure on the cadaver, either before or after opening the abdomen; therefore we should estimate dulness from its extreme limits, in order to approach as nearly as possible to the truth. (3) The upper border of the liver corresponds in general to the interval between the fifth and sixth ribs. (4) In the healthy state, the vertical measurements increase almost regularly with each year's

growth (exception being made of certain individuals). (5) This appreciable growth between the second and ninth years ceases almost entirely by the twelfth year, *and can be measured in centimetres by adding to one, two, or three centimetres an additional centimetre for every year of the child's life* up to eight years, exclusive. Beyond eight or nine years the liver dulness *measures approximately nearly, but not quite, one centimetre for each year of the child's life.* (6) In this table the liver was *somewhat large* with catarrhal jaundice and gastric disturbance, *large* with cardiac disease, *very large* with amyloid liver, syphilitic liver, fatty liver, and hydatid cysts. (7) The slightest disturbances of health may cause a variation of two to four centimetres, and a variation of three to ten centimetres was found with certain grave lesions.

SURGERY.

IN CHARGE OF B. FARQUHAR CURTIS, M.D.,
Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

Fractures of the Neck of the Femur. (Treatment by the Thomas Hip-Splint. *Annals of Surgery*, July, 1892, p. 60.) By John Ridlon, A.M., M.D.

Ridlon makes a strong argument for the use of the Thomas hip-splint in treating fractures of the neck of the femur. Among the advantages that this splint provides are posterior support to the fracture (thus resisting the flexion, which is the most common displacement that occurs, in lifting the patient, for instance), fixation without lateral pressure, ease of lifting and cleansing the patient, and fixative traction, if needed. The splint can be applied without assistance and without moving the patient.

Radical Cure of Femoral Hernia. (Sur l'opération de la cure radicale des hernies crurales. *Bulletins et mémoires de la Société de Chirurgie de Paris*, June, 1892, p. 311.) By M. Berger.

Berger states that it is probably due to the small size of the tumor that femoral hernia is not more frequently operated upon for radical cure; yet the difficulty of retaining it by trusses, the frequency with which it becomes irreducible and strangulated, and the impossibility of curing it by wearing a truss, even in the young, make it particularly desirable to attempt its radical cure by operation. As to the frequency of strangulation, the hospital statistics of Paris show nearly as many operations for the relief of strangulation in femoral as in inguinal herniæ, although the inguinal form of hernia is ten times as frequent.

Berger's method of operation is as follows An incision is made parallel with the fold of the groin. The sac is opened and its contents reduced; if omentum is found adherent, it is drawn well out of the ring before ligation, in order that the stump shall not remain in contact with the ring and

predispose to recurrence. The sac is isolated above the femoral ring, ligated with silk (by transfixion) high up and cut away, the two ends of the ligature being left long. Each end of this ligature is threaded on a needle and passed separately through the abdominal wall three or four centimetres above the crural opening, so that when they are tied, the stump of the sac is drawn well up into the abdomen, as in MacEwen's operation. This manœuvre is supposed to entirely do away with any depression of the peritoneum at the site of the ring which could favor recurrence. Finally the ring is closed by a sort of purse-string suture, picking up the fascia of the pectinæus posteriorly and the tissues of Poupart's ligament anteriorly. Three or four sutures of this kind are inserted, each covering in the preceding after it has been tied. The wound is closed without drainage and the thigh kept flexed for a few days. Twelve cases have been operated upon. One was found in perfect condition two years and three months later, two others six months, the rest have not been followed, so that the crucial test (time) had not yet been applied to the method.

Laryngectomy at Kocher's Clinic. (Die Laryngectomien an der Kocher'schen Klinik zu Bern. *Arch. f. klin. Chirurgie*, 1892, xliv., Heft 1, p. 1.) By Dr. O. Lanz.

Lanz reports seven total and seven partial laryngectomies done by Kocher with only one death, although five of the cases were complicated with simultaneous extirpation of the pharynx, œsophagus, a coincident goitre, and in one case the tongue, floor of the mouth, hyoid bone, the body of the lower jaw, pharynx, and thyroid cartilage were removed at one sitting. The extensive character of these operations is itself an indication that the disease was widespread and that the recurrences must have been prompt. As a matter of fact, of nine cases of carcinoma, only one remained free from recurrence over a year after the operation, that case dying without recurrence two years after the extirpation, one other remained well when seen one year after. In all the rest the disease returned within six months.

Kocher's methods do not differ greatly from those usually employed, but his sponge canula for tamponing the trachea is worthy of notice for its simplicity. An ordinary small concavo-convex sponge is taken and the shaft of the tracheotomy tube passed through its centre, the concave side of the sponge being turned upwards, and it is secured in place by a thread wound around the apex of the sponge, two grooves on the outside of the tube preventing it from slipping.

Radical Cure of Psoas Abscess. (*American Journal of the Medical Sciences*, July, 1892, p. 35.) By R. W. Murray, F.R.C.S.

Murray reports four cases of psoas abscess cured by incision (from the loin), curetting, and suture without drainage, as practised by Barker. One case contained twenty ounces of pus.

Ganglion and Teno-Vaginitis Tuberculosa. (*American Journal of the Medical Sciences*, June and July, 1892, pp. 643 and 38.) By C. S. Evans, B.S., M.D.

Evans gives a careful summary of our knowledge of ganglia and tuberculous disease of the tendon-sheaths. While authorities still differ, the weight of evidence appears to be against the supposition that ganglia arise from the tendon-sheaths or the synovial linings of the joints as herniæ. Their probable origin is from the synovial follicles of Gosselin, or from the subsynovial bodies of Henle, thus making them similar in nature to dermoid cysts, or to retention cysts. Evans states that communication with joints or tendon-sheaths is very rare, but, according to the reviewer's experience, the former is not at all uncommon, although that communication does not prove that the cysts resulted from herniæ of the synovial lining, as they might easily have formed their communication after development.

GENITO-URINARY SURGERY.

IN CHARGE OF WILLIAM K. OTIS, M.D.,
New York.

"Caisson" Working in Bladder Surgery. (*British Med. Journal*, November 19, 1892.) By E. Hurry Fenwick, F.R.C.S.

This author observes that a "caisson" in engineering work is a chamber of iron or wood which is used in the construction of subaqueous foundations, such as those required for the piers of bridges. Caissons, often in the form of enormous hollow cylinders, are sunk over the sites selected for the position of the piers until they rest upon the river-bed and sink in the soft soil by their own weight or by ballast-pressure. The upper end is above the river-level. The water is pumped out until the cylinder is empty, and the work of excavation can then be proceeded with as if on dry land. The late Mr. McGill, of Leeds, has demonstrated a median lobe of the prostate by means of such a speculum. In his first case Mr. Fenwick used a Ferguson's speculum. He passed it through the bladder-wound, and sunk it on the spot where he had previously ascertained, by the electric cystoscope, that the tumor was situated. This he did without permitting the water in the bladder to escape, as he believed that it would be easier to shift the lower end of the cylinder in water, if by chance he had not dropped the cylinder upon the exact spot. The tumor also would be less liable to be scraped by such a movement, and the consequent bleeding would be avoided.

By placing a Jacques's catheter into the cylinder, when it rested on the bladder, and establishing siphon drainage by suction from a syringe, the water was run out of the caisson and the tumor could be seen dry and bloodless

at the bottom. By throwing in a beam of electric light it became possible to remove this growth with the forceps with extreme accuracy and thoroughness. Instead of Ferguson's speculum he now employs thin, white porcelain cylinders of various lengths and sizes, according to the thickness of the parietes, the depth of the bladder, and the size of the area to be operated upon. The bladder incision is made just large enough to admit the cylinder. Rectal bags are not used, but the patient is almost always placed in the "Trendelenburg position." The method has proved of especial value in the very earliest stages of benign tumors, where the growth was very small; also in removing small, sessile, secondary splashes of villous growths which were so often left behind untouched or unrecognized by the finger after the main portion of the tumor had been wrenched or scraped off. If vesical growths were operated upon earlier (and by this method statistics of recurrence would be less humiliating), the mortality of the actual operation would diminish, and even in epitheliomatous degeneration of the mucous membrane a cure might in some instances ensue. This belief is based upon an experience with over one hundred cases of tumors of the bladder. The method could be used in bladder-growths, for curetting or cauterizing definite catarrhal or tuberculous ulcerations, for incising the mouths of sacs caused by encysted stones, and for marking the lines of enucleation of the intravesical outgrowths of the senile enlarged prostate. It is unfit for contracted bladders. It is recommended upon the following grounds:

1. Only a small incision is necessary.

2. The continual passage of fingers, forceps, curettes, and sponges through the wound and bladder incision is unnecessary, for the caisson once introduced is not removed until the stitches have been inserted. All bruising and tearing of the bladder incision by these manipulations is thus avoided, and, if cystitis be present, all chance of fouling the perivesical tissue is minimized.

3. The growth, the whole growth, and nothing but the growth should be removed.

4. The smallest patches of primary or secondary growth can be seen and accurately treated, the caisson being shifted from place to place.

5. The base of the growth can be cauterized by means of a galvanocautery porcelain point with safety and certainty.

6. Bleeding can easily be arrested before the patient leaves the table.

(Practical experience with this method leads me to believe that it is one of the most valuable of the recent additions to vesical surgery, and entirely fulfils all the claims made for it by its distinguished author.—W. K. O.)

Experimental Research in the Innervation of the Bladder. (Recherches expérimentales de l'innervation de la vessie. *Ann. d. Mal. d' Org. Genito-Urin.*, November, 1892.) By Dr. Von Zeissl, of Vienna.

After careful and protracted research, Zeissl has reached the following conclusions in regard to the innervation of the bladder:

1. The erector nerve (Eckard) is the motor nerve of the muscular coat and opens the sphincter.

2. The opening of the sphincter of the bladder takes place independently of the muscular coat.

3. The hypogastric nerves close the vesical orifice. The motor action of these nerves on the bladder is feeble.

4. The hypogastric nerves arrest the spontaneous movements of the bladder, as can occasionally be observed.

5. The hypogastric and erector nerves appear to obey the law of crossed innervation formulated by Von Basch. According to this law the nerve-trunks which control the motor nerves of a system of muscles also innervate the antagonistic muscular fibres contained in the same system.

6. The erector nerve contains, therefore, motive fibres for the longitudinal muscular fibres of the bladder and inhibitory fibres for the sphincter or for the circular muscular fibres.

7. The hypogastric nerves contain motor fibres for the sphincter and inhibitory fibres for the muscular coat of the bladder.

ORTHOPÆDICS.

IN CHARGE OF REGINALD H. SAYRE, M.D.,
Assistant to the Chair of Orthopædic Surgery, Bellevue Hospital Medical College, New York.

Section of the Flexor Tendons of the Index Finger; Suture of the Peripheral Ends to the Tendon of the Medius; Cure. (Section des Tendones fléchisseurs de l'Index; Sutures des Bouts périphériques avec le Tendon du Médius; Succès. Par A. Dubrueil. *Revue d'orthopédie*, November 1, 1892.)—The patient broke a glass tube in the palm of the hand, the end of the tube penetrating the palm in the first interdigital space. The tube was extracted, leaving no splinters in the wound, and there was very trifling hemorrhage. The family physician noticed that the patient could not flex the ungual and middle phalanges, but could flex the proximal phalanx, and made a diagnosis of section of the superficial and deep flexor tendons of the index finger.

Dubrueil saw the patient three days after the injury, and confirmed the diagnosis. Five days after the injury, under antiseptic precautions, and after applying an Esmarch tube around the arm, he cut down on the site of injury in the palm by a longitudinal incision, hoping to find and reunite the ends of the severed tendon. He could not find the proximal ends, on account of the distance to which they had receded in their sheaths, without more dissection than he thought prudent, and therefore stitched the distal extremities of both the index flexors to the outer side of the tendon of the middle finger by catgut sutures. Drainage was established. The wound was dressed twice, and in two weeks, when all dressings were removed, it was

found that the patient had no power of flexion or extension over his fingers. There was marked atrophy of the hand and forearm, and sensibility was also diminished. This was supposed to be due to neuritis caused by the constriction of the arm by the Esmarch tube during the hour and a quarter occupied in the operation, and massage and the constant current of electricity were ordered, with the effect of completely restoring power to the hand. Two months after operation the patient could play the piano, and is said, strange to say, to have the power of flexing the index finger independently of the middle finger, which surprised Dr. Dubrueil, and which curious fact he does not attempt to explain.

Lumbar Luxation. (Luxation Lombaire. Par M. Nélaton. *Revue d'orthopédie*, November, 1892.)—The patient, a boy of eighteen, was in good health until June, 1891, when he fell a distance of about four metres backward. He was dazed for a time, and was unable to speak, though he could hear and did not lose consciousness. He went to work soon after the accident. He felt great pain in his loins, but kept at work in the fields during harvest. He felt the pains most severely in his loins when stooping, but did not trouble about it. In November he was thrown from a horse and fell on his shoulder. Following this, the pains in the loins grew worse. He had cramps in his legs, and sensations like ants crawling on them, and his legs became very easily tired. It now occurred to him to feel his back, and he found a marked depression there, but did not mention it. In the following spring his legs grew weaker, and he showed his back to his mother, who had him brought to the hospital. In the lumbar region there was a hollow, and just below this a marked projection formed of the spinous process of the fourth lumbar vertebra. This was about one centimetre above a line joining the crests of the ilium, and corresponds both in dissections and in examinations of skeletons made by Nélaton to the fourth lumbar vertebra, the fifth always lying below the line joining the iliac crests. On running the finger up the spine from the sacrum, after passing the projection of the fourth vertebra the finger slid forward into a depression deep enough to contain the thumb, and which felt like the superior surface of the fourth vertebra. In the front of this hollow could be felt the spinous process of the third vertebra, and it seemed as if the latter had been slid forward about three or four centimetres. The spine about this point was abnormally straight. There was a slight lateral curvature. The spinal muscles on each side, while relaxed, gave the impression of two large abscesses, but as soon as the patient stiffened them this appearance vanished. In front there was marked retraction of the belly, as is seen when violent efforts are made at expiration. The upper part of the trunk projected forward over the pelvis. The ribs were very close to the iliac crests. By palpation through the abdominal walls it was impossible to feel a projection corresponding to the displacement of the vertebræ behind. The patient could pick an object from the ground with ease and apparently in a normal

manner, but his legs were so feeble that after having three photographs taken he shook so much that the remainder of the pictures were taken on the following day. There was no ankle-clonus; the knee-jerk was normal. Sensation to touch, pain, and temperature preserved. He has pains in the back and girdle, sensation reaching to the testicle; no trouble with defecation or urination; erections normal.

Nélaton thinks this is a case of luxation of the third lumbar vertebra forward on the fourth, consequent on violence, and being aided by unusual laxity of the muscles and ligaments of the spine, produced by his having from early childhood been employed in the fields, bending forward.

Malgaigne (*Traité des Fractures et Luxations*, t. ii. p. 384) mentions only three cases of luxation of the twelfth dorsal upon the first lumbar vertebra, after Larrey; and one of the first lumbar on the second, after Dupuytren. Stimson ("Treatise on Dislocations," p. 59) reports, after Blasius, eighteen cases of lumbar luxation, most of them of the twelfth dorsal and first lumbar; some of the first lumbar on the second; some of the second and third; one case of the third and fourth, and one of the fifth. Besides this, there are two cases reported of the third on the fourth lumbar, one by Curling, the other by Porta. Beyond these three cases, Nélaton has not found any reported, so his case is the fourth so far recorded as occurring in this situation.

OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF JOHN M. KEATING, M.D., LL.D.,

Colorado Springs, Colorado; Fellow of College of Physicians of Philadelphia; Gynæcologist (Emeritus) to St. Agnes's Hospital, Philadelphia; formerly Visiting Obstetrician to the Philadelphia Hospital (Blockley); Editor "Cyclopædia of the Diseases of Children," etc.

Ventral Hernia following Abdominal Section. (Obstetrical Society of Philadelphia. Meeting of November 3, 1892. *Annals of Gynæcology and Pediatry*, December, 1892.)—Dr. Charles P. Noble made the following remarks: "Last spring I was in New York and saw Dr. Edebohls operate. Instead of passing the sutures entirely through, he pushes the skin with the underlying connective tissue to one side and inserts the needle in the aponeurosis, and passes it through the recti muscle and peritoneum, then on the opposite side in a corresponding manner. When tied it is a buried suture. He uses silkworm-gut, and allows it to stay permanently. In an incision two inches in length there would be five or six buried silkworm-gut sutures. Six strands of silkworm-gut add very much to the strength of the weakened part of the abdominal wall, and I am sure that it will act as a preventive of hernia. When I first saw this done it occurred to me that perhaps sutures tied in this way would act as irritants and cause trouble. I inquired of Dr. Edebohls whether or not this had been the case. He stated that he had operated on fifty cases in this way, and in only two had

he found it necessary to remove a suture subsequently. Since then I have been using this method of suturing, and have had no trouble. I have had no sutures to take out, and the patient has not known that they were in the abdominal wall. I am quite satisfied that leaving these six or eight silkworm strands will tend to prevent hernia. With reference to catgut, I have not been favorable to it, and use it but little. It is due to catgut, however, to say that those who use it claim good results. For instance, Dr. Dudley, of New York, makes the statement that he has had no hernia in some eighty cases where catgut was used. It is only proper that this fact should be mentioned. With reference to the length of time that patients remain in bed, every one will agree that the longer they are in bed the better. I have followed the rule of allowing them to get up in three weeks. With the buried suture I think that is long enough. If I find hernia occurring I shall leave them in bed longer."

Kraurosis Vulvæ. (*Annals of Gynæcology and Pediatry*, December, 1892.) By Frances Hatchette, M.D.—The author writes as follows:

The clinical history is as follows: A slight yellow discharge from the vagina, much scalding on passing water and dyspareunia. If an examination be made early in the disease there will be found on the vulva one or two red spots, varying in color from a palish brick-red to a bright purple, exquisitely tender on pressure, and which bleed easily when touched. If observed closely, these spots will be found to be slightly below the level of the normal mucous membrane. The disease spreads serpiginously, disappearing from the old spot as it progresses toward the new, until the whole mucous membrane becomes involved. The process is slow, extending over years, and results in contraction of the vestibule of the vagina, until it will scarcely admit the finger. After the active stage has subsided the integument presents a whitish dry appearance where the atrophy was greatest, while the neighboring parts are of a pale grayish-red. Dr. Tait has had the good fortune to watch these cases during the whole progress of the disease. The microscopical examination made by him shows that the gland structure has become atrophied, leaving only the thin dilated capillaries, among which lie the nerve-fibres, protected only by the superficial epithelium. These observations explain the three chief clinical facts,—tenderness, vascularity, and contraction.

Hypertrophic Endometritis. (*Centralblatt für Gynäkologie*, 1892, No. 42.)—Treub properly emphasizes the fact, too little recognized, that this condition is not of inflammatory origin. It should be regarded as simply an hypertrophy of the endometrium, for reasons both anatomical and clinical. Anatomically it appears as an hypertrophy of either the glands or interstitial tissue, but infiltration with leucocytes is never observed unless a true endometritis coexists with the hypertrophy, when the latter will be found to be limited to the cervical mucosa. Clinically, this condition of

hypertrophy is never attended with inflammatory symptoms; menorrhagia, and rarely a profuse watery discharge, accompanied with more or less severe pain, being the only indications of an abnormal state of the endometrium. The fact that it is such a common accompaniment of subinvolution, retroflexion, fibro-myoma, and cancer of the cervix shows that it is due purely to disturbances of circulation. It is never the primary result of infection.

OPHTHALMOLOGY AND OTOLOGY.

IN CHARGE OF J. E. HARPER, A.M., M.D.,
Chicago, Illinois.

An Aural Reflex. (*Annals of Ophthalmology and Otology*, October, 1892.)—Dr. J. A. Maloney has noticed that certain tunes or tones of the piano will cause forced expiratory efforts. He has not isolated the tones yet. The cause in these cases is different from that producing "ear cough," or other reflex phenomena, such as tingling in the tongue, tickling in the throat, etc., for these have been produced by mechanical stimulation of the external ear. "Ear cough" is attributed to irritation of the auricular branch of the pneumogastric nerve, distributed to the auditory canal, which is reflected to the motor fibres of the superior laryngeal nerve, also a branch of the pneumogastric. This induces contraction of the crico-thyroid muscle, which manifests itself in coughing and sometimes in vomiting.

In the first mentioned phenomenon the reporter thinks the reflex is due to irritation of the tensor tympani nerve, reflected to the vagus through the otic ganglion, thence to the non-striped muscle of the entire bronchial system, which offers resistance to increased pressure within the air-passages. The vagus is the motor nerve of these fibres.

Aural Massage by the Phonograph. (*Journal of Ophthalmology, Otology, and Laryngology.*)—Dr. Henry C. Houghton describes the apparatus for and method of application of massage in chronic non-suppurative middle-ear affections as follows:

"The apparatus consists of an ordinary phonograph, run by storage battery and motor, and the ordinary cylinder, as used for receiving impressions, or rather, for reproducing impressions made upon the cylinder, is the agent by which the vibrations are produced. The depressions made in the cylinder are, however, not made by sounds produced by conversation or otherwise, but incisions either in the form of lines, shallow or deep cuts, or, in fact, any roughness of the waxed cylinder will cause the reproducer to make more or less extensive excursions, and, therefore, more or less powerful succussions of the column of air lying above the diaphragm. The column of air above the diaphragm is made continuous with the air in the external auditory canal by an ordinary rubber stethoscopic tube, the ear-

tubes of which fit more or less closely in the meatus. There is connected with the motor of the phonograph a governor, which regulates the rapidity of revolution of the cylinder, and adjustment of this gives more or less rapid revolution of the cylinder, therefore more or less frequent succussion of the volume of air in the tube of the external auditory canal, and, hence, a corresponding movement of the drum-head and ossicula. The main effect of a revolution of the cylinder—the reproducer point being in contact with the surface—is to produce a sensation of great noise, joined with a sensation as of blows. If the revolution be slow, the sensation of blows is very distinct, but if rapid, the sense of blows is lost in the general confusion of the great roar. A sitting of from five to twenty minutes produces upon different subjects a sensation of heat, itching, dilatation, openness of the meatus, with great confusion in the head, which gradually passes away. (In some, discomfort, almost distress, in the occiput, similar to that which is noticed in patients with eye-strain.) With hearing people this is all that is noticed. In the deaf, there comes a secondary result of more acute hearing after an interval of three to six hours, which is more or less temporary. Continued treatment of non-hearing subjects produces increased secretion of the mucous membranes of the head, neuralgia, muscular soreness, which, in one or two instances, I have noticed extend to the clavicle and scapulæ. Later on, a gain is noticed, first for sounds which have not been previously recognized, such as carriages, cars, distant whistles, bells, etc., and then voices without being able to recognize the words, and so the gradual improvement is noticed."

The Syringe in Aural Practice. (*University Medical Magazine*, November, 1892.)—Dr. B. Alexander Randall concludes a clinical lecture on this subject with the following:

"In conclusion, I may justly claim that the syringe will prove of great value to you in more than half of the aural cases which you meet. It will be the best instrument—generally the only proper one—for you to employ in the removal of cerumen masses or the rarer foreign bodies; it is your best means of cleansing in many suppurating cases, and as a means of directly and efficiently applying heat to acutely-inflamed conditions it has no superior. But you must remember that this is not true of the haphazard way in which it is generally employed by lay hands, and far too often by medical hands too. It must be used carefully and intelligently,—a proper instrument with fluid of proper temperature, and with the eyes aiding the hands to the efficient utilization of the valuable services which it can afford."

Boric Acid and Bismuth Subgallate in Otorrhœa. (*Merck's Bulletin.*)—According to Dr. S. Chaniavsky, who has had occasion at the Military Hospital of Alexandrople to test all the antiseptics and astringents recommended against otic discharges, the best means of combating either

an acute or a chronic otorrhœa, excepting, of course, certain surgical measures, consists in injections of a three-per-cent. solution of boric acid, followed by a careful and thorough drying of the parts with absorbent cotton, and the introduction of a cotton tampon impregnated with bismuth subgallate.

The Symptomatic Value of the Pulsation noticed in the Ear by the Endoscope. (*Ann. des mal. de l'oreille et du larynx*, xvii. 9; *Medical and Surgical Reporter.*)—Gellé draws the following conclusions as the result of his observations:

By aid of the endotoscope the state of the circulation of the blood in the tympanic cavity can be studied; in active congestion of the tympanic mucous membrane this instrument shows pulsations isochronous with the pulse. This demonstration is especially useful when the objective symptoms are wanting. The pulsations of the endotoscope actually show the activity of the inflammatory process in the middle ear. They disappear when the process declines, but persist as long as the abnormal vascularity lasts. Their absence in certain cases of subjective affections of congestive appearance enables us to localize the seat of the exudation in the deeper parts of the organ, or to recognize the purely nervous origin of the phenomena.

DISEASES OF THE LARYNX, NOSE, AND SURROUNDING STRUCTURES.

IN CHARGE OF J. PAYSON CLARK, M.D.,

Physician to the Throat Department of the Boston Dispensary; Assistant Physician for Diseases of the Throat, Massachusetts General Hospital.

Congenital Closure of the Right Choana; Operation with the Galvano-Cautery; Death. (*Deutsche med. Wochenschr.*, July 21, 1892.)

A young man consulted Dr. Victor Lange for an obstruction of the right nostril, which had been noticed since earliest childhood. The obstruction consisted of a partly bony, partly membranous wall. This was burned through with the galvano-cautery, under chloroform anæsthesia, and a good air-space obtained. The patient had pains in the head following the operation. These became worse on the third day, and were followed by unconsciousness, delirium, and death. The probable cause of death was thrombosis extending into one of the cerebral sinuses. No autopsy was allowed.

Dermatol in the After-Treatment of Galvano-Cautery Operations in the Nose. (*Deutsche med. Wochenschr.*, July 28, 1892.)—Dr. Ed. Aronsohn recommends the use of this drug after operations in the nose as diminishing the reaction and the tendency to the formation of adhesions, besides being in no way unpleasant to the patient. Immediately after the

operation, and at three or four succeeding visits, a sufficient quantity of the powder is blown into the nostril to completely cover the mucous membrane. The patient himself is also to snuff up a pinch of dermatol four or five times a day. The powder is insoluble, antibacterial, non-irritating, and odorless.

Diphtheria and Allied Pseudo-Membranous Inflammations. (A Clinical and Bacteriological Study. *Medical Record*, July 30 and August 6, 1892.) By W. H. Park, M.D.

This is an interesting and very thorough paper. Such an abstract as space will allow here can hardly more than outline its contents. The writer begins with a review of the work of other observers on this subject since the discovery of the Klebs-Löffler bacillus, in 1883. He then gives his methods of examination. The cases examined were one hundred and fifty-nine, in fifty-four of which the specific bacilli were found. These include six cases of membranous rhinitis, all of which contained quite numerous colonies. These six cases, like those observed by others, all ran a benign course. No history of infection was obtained, and colonies of the bacilli grew rather feebly on culture media. It would seem that cultures made from a previously sterilized swab or from a bit of membrane can be thoroughly relied on to show the presence or absence of the Löffler bacilli as soon as the pseudo-membrane is developed.

Cultures from dried stains of diphtheritic sputum on bed-linen, etc., showed in every case at least a few colonies of the Klebs-Löffler bacillus. More than one-third of the cases gave a clear history of having been brought in contact with the persons or clothing of those suffering from, or having recently had, what was diagnosticated diphtheria. These facts show the danger of carrying the infection in clothing.

In five of the fifty-four cases the disease was confined to the larynx and bronchi. There seems to be a great difference in the virulence of bacilli from different cases, and also in the degree of susceptibility in individuals. In cases where the diphtheria bacilli alone were present, the temperature never rose above 100° F. In some cases, where streptococci were present, the temperature was high, in others low.

Of pseudo-membranous inflammations, in which the Löffler bacillus was not present, forty-seven were observed. In fourteen of these the membrane was mostly confined to the tonsils, soft palate, and pharynx. These cases ran a short mild course, terminating in recovery. In all were found almost pure cultures of streptococci. These cases differed from those complicating scarlet fever, in that there was never suppuration of the cervical glands nor diffuse cellulitis. Seventeen of the above forty-seven cases complicated scarlet fever. There were sixteen cases of pseudo-membranous laryngitis not diphtheria. Five of these died, broncho-pneumonia being the most frequent cause. This shows sixty-six and two-thirds per cent. of recoveries as compared with thirty per cent. in laryngeal diphtheria.

There were fifty-eight cases of pseudo-membrane confined to the tonsil and caused by streptococci. In adults thick croupous patches, adherent or non-adherent, if confined to the tonsils after twenty-four hours very rarely have anything to do with true diphtheria. The tonsils were the parts most frequently involved in both diphtheria and pseudo-diphtheria. The mortality in true diphtheria was forty-six and one-half per cent., in pseudo-diphtheria, five and two-thirds per cent. The importance of a bacteriological examination in all cases is dwelt upon.

Eversion of the Ventricle of Morgagni. (*Revue de Laryng., d'Otol.*, etc., July 1, 1892.)—Dr. R. Beausoliel reports a case of this rare affection of a purely inflammatory origin, appearing with an acute laryngitis, and diminishing slowly after the latter had disappeared. The everted left ventricle covered the left vocal cord with a smooth red mass. Under the usual treatment for acute laryngitis the laryngeal inflammation gradually diminished, and also the volume of the tumor, and the voice slowly returned. There was reason to believe that previous attacks of laryngitis, of which the patient gave a history, had been accompanied by a like eversion of the ventricle.

DERMATOLOGY.

IN CHARGE OF J. J. PRINGLE, M.B. (EDIN.), F.R.C.P. (LOND.),
Physician to the Department for Diseases of the Skin in the Middlesex Hospital, London.

Corns and Callosities. (*Der Pharmaceut*, September 25, 1892.)

This journal recommends the following treatment for this condition: Moisten the excrescence with an antiseptic solution, and cover it with a layer of pure, crystallized salicylic acid. Upon this place a disk of cotton-wool soaked in a boracic acid solution, and cover it with a leaf of gutta-percha. Attach the whole with a bandage.

If the callosity is not very thick, the dressing may be left for five days, when the induration will be found detached from the adjacent tissues. When the callosity is exceedingly thick, as on the sole of the foot, the dressing may be left for ten days, or renewed after five days.

Leprosy. (*Australasian Medical Gazette*, August 15, 1892, p. 303.) By Dr. Eugen Hirschfeld.

From observations made in the bacteriological laboratory of the Brisbane Hospital, Sidney, the following facts were elicited in regard to a micrococcus which has as yet not been observed in man:

1. It is a coccus, with a diameter of 1.2 to 1.8.
2. It stains deeply and readily with basic aniline dyes.
3. It loses its color on subsequent treatment with mineral acids.

4. It is found in the tissue-juice and the blood of leprous ganglia.

5. It is found free and not enclosed in leucocytes.

6. It occurs either singly or in pairs, or in short chains or in irregular masses.

7. It does not grow on ten-per-cent. nutrient gelatin at 68° to 72° F., neither in test-tubes nor in plate cultivations.

Further culture experiments will be made on agar-agar and blood serum as soon as opportunity offers. A search was made to see whether these bacilli could be found circulating in the blood, but the result of the examination was negative.

Hyperidrosis of the Feet. (*La Semaine Médicale*, No. 46, 1892.)

Kaposi recommends the following prescriptions for this annoying condition:

℞ Naphthol, gr. xxii;
Glycerin, gr. xlviii;
Alcohol, ʒi.
Sig.—Apply night and morning; then dust.

Or the following:

℞ Pulv. naphthol, gr. v;
Pulv. amyli, ʒi.
Every morning.

One may dust the stockings with

℞ Sodii salicylat., gr. iv;
Potassii permanganat., gr. vi;
Pulv. talc., ℈iv;
Bismuthi subnitrat., ʒiss.

An Occasional Symptom in Erythema Nodosum. (*Australasian Medical Gazette*, August 15, 1892, p. 323.)

Dr. J. C. Verco calls attention to a symptom which he has twice observed in the course of this disease. The first case in which it was recognized by him was a young man of twenty who had been under his care for thirteen days. He had had the papular rash about the face and nodes on the extremities for sixteen days. While the nodes on the legs were fading there was still much œdema in the neighborhood and slight tenderness. At this time the patient complained of tenderness of the finger-nails, and on pressure small purplish points and lines were visible through them as though there were minute hemorrhagic extravasations into the matrix. In a week these small blood specks could still be seen under the nails, but the finger-ends were no longer tender.

This tenderness of the finger-ends and the subungual hemorrhages were also observed in a second case. She was convalescent, and the nodes had been well marked. Her finger-tips were very tender, and under nearly every one of the nails on the hand were one or more longitudinal, linear,

dark reddish-purple marks, about a quarter of an inch long, which did not disappear on pressure. There were none to be seen under the toe-nails.

The writer believes that, as he has observed this twice, it may be regarded as a symptom and not merely as a coincidence. It is not found in all cases. Although it would appear to be purpuric in its nature, it was not attended by purpura elsewhere in either of these instances, nor was there any rash on the hands or fingers.

HYGIENE AND BACTERIOLOGY.

IN CHARGE OF A. C. ABBOTT, M.D.,
First Assistant in the Laboratory of Hygiene, University of Pennsylvania.

The Origin and Appearance of Alexines in the Organism. (Ueber den Ursprung und Vorkommen von Alexinen im Organismus. *Centralblatt für Bacteriologie und Parasitenkunde*, Bd. xii., Nos. 22 and 23.) By Dr. Hankin.

In this contribution Hankin endeavors to study more closely the bacteriacidal agent or agents in the circulating blood. He has made a number of observations which have led him to believe that the granules in those elements of the blood known as eosinophiles are intimately concerned in this process. As a result of his studies he presents a hypothesis to the effect that the fixed cells of the body are not alone responsible, through their power of destruction of bacteria, for their protection of the body against the inroads of these organisms, but that there are special cells possessing granules, which granules represent the actual bacteriacidal substance.

The experimental evidence presented by Hankin is too voluminous to give here, but from what is known of the blood of the animals upon which he worked, viz., rabbits, it is fair to accept some of his results with a certain degree of scepticism. The blood of the rabbit is by no means so constant in the proportion of its histological elements as is the human blood, and this is particularly the case with the nucleated elements containing granules. In view of the fact that the histology of the rabbit's blood is as yet unsettled, it seems somewhat premature to offer as an explanation of such an important process the hypothesis advanced by Hankin.

Experiments upon the Bacteriacidal Property of Blood-Serum. (Untersuchungen über die bacteriacide Eigenschaft des Blutserums. Arbeiten auf dem Gebiete der pathologischen Anatomie und Bacteriologie. From the *Pathologisch-Anatomischen Institut zu Tübingen*, Bd. i., Heft 3, page 421.) By Dr. Jetter.

The results of this elaborate series of experiments introduce an unlooked-for technical factor into the controversy that has been conducted for some time past upon the *modus operandi* of immunity.

Jetter finds, in conformity with what has already been suggested by

Haffkin and Christmas, that the methods that have been pursued for determining *in vitro* the disinfectant properties of the fluids of the body have given results that have been misleading.

The conclusion that has been drawn from these experiments has been that the reduction in number experienced by bacteria when introduced into blood-serum results from the positive germicidal activity of the serum. In experimenting with a number of other substances, some of which were the ordinary materials used for cultivating bacteria, he has noticed, after inoculation, a diminution in the number of organisms originally introduced, so like that observed when the same organism is introduced into blood-serum that he believes this reduction to be due, less to a positive germicidal power of the blood-serum than to the actual death of the organisms, resulting from being transferred from a medium upon which they have been accustomed to grow, to another of somewhat different constitution.

Coming, as this work does, from a laboratory worthy of confidence, these results, though somewhat startling, cannot be ignored. In consideration of the personality of those who have worked upon the blood-serum question, the hypothesis advanced by Jetter must be held an open question.

The Chamberland Filter. (El filtro Chamberland. *Centralblatt für Bacteriologie und Parasitenkunde*, Bd. xii., No. 24, page 883.) By Drs. Acosta and Granda.

The authors refer to the popularity of this filter in Havana, Cuba; its general use being due to the fact that the drinking-water of the city is, for the most part, bad. They have investigated these filters with a view to determining if good is being accomplished by their use, and conclude, as a result of their investigations, that for domestic purposes they not only do not afford protection against disease-germs, but are positively harmful, in offering a sense of false security. In laboratory use, where these filters can be employed with the proper precautions, their value is unquestionable, but for household purposes they are, as a rule, to be discouraged.

The Detection of the Typhoid Bacillus in Flowing Water. (Ueber den Nachweiss des Typhus Bacillus in fliesenden Wasser. *Münchener medicinische Wochenschrift*, 1892, No. 27.) By Ströll.

In the case of running streams suspected of being contaminated by the evacuations of typhoid-fever patients, where it is necessary to examine the water bacteriologically, the author recommends the use of frames, covered with loose cotton goods, so placed in the stream that the water flows through them. They act as filters and retain in their meshes the bacteria that were suspended in the water. He claims by their use to have demonstrated the bacillus of typhoid fever in the water of a running stream that had been contaminated with the excreta of typhoid-fever patients. After being suspended in the stream for a few hours the frames are removed and their cotton covering sprayed off with sterilized distilled water into a

separating funnel. When sedimentation has occurred the sediment is drawn off for investigation in the ordinary way, by the plate method.

PATHOLOGY.

IN CHARGE OF ALLEN J. SMITH, A.M., M.D.,
Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas.

Miliary Tuberculosis and Gummata Occurring in the same Lung; their Differential Diagnosis. (*New York Medical Record*, December 3, 1892.) By Dr. Eugene Hodenpyle.

The differentiation between miliary tuberculosis and small gummata is often exceedingly difficult, the following points of differential diagnosis may be emphasized, although, of course, there are many exceptions to the general statements made:

1. The history of tuberculosis in the one case, and of syphilis in the other, may be of importance.

2. The bacteriological examination is usually positive in tuberculosis, unless the tubercles are very old and fibrous; it is negative in syphilis.

3. Inoculation experiments are usually positive in tubercle, and negative in gummata.

4. Tubercles are usually present in considerable numbers, and are scattered throughout the entire organ and throughout the body; gummatous deposits are usually single, or are present in small numbers, and are confined to a single organ.

5. Tubercles are usually much smaller than gummata.

6. Tubercles show a marked tendency to undergo cheesy degeneration and to form cavities; gummata rarely become cheesy, usually drying up and undergoing calcification.

7. Amyloid degeneration is sometimes present in tubercles, but, so far as known, is absent in gummata. On section, the tubercles appear as round or irregular grayish masses, often soft or cheesy in the centre, and surrounded by a zone of inflammatory products.

8. Microscopical examination will show the presence of tubercle bacilli in the tubercles; but no characteristic micro-organism is present in syphilis. Giant cells are present usually in tubercles, and are usually absent in gummata.

Report of a Case of Multiple Sarcomata in an Infant. (*University Medical Magazine*, April, 1891.)—Dr. F. A. Packard reports the case of an infant dead at the age of eight months from a gradually augmenting dyspnœa, apparently dependent in some way upon the presence of multiple sarcomata in the patient's person. These tumors were first observed upon the child's back as small subcutaneous nodules at the seventh or eighth week

of life, increasing constantly from that time to a great number, and in size until the largest of the superficial nodules equalled in bulk a pullet's egg.

At the autopsy the thymus gland was found enlarged, covering the pericardium over almost two-thirds of its anterior surface in the median line, extending as low as the level of the sixth rib, dark in color, and containing a number of small, slate-colored areas of induration, of the size of buckshot, distinct from the healthy substance of the organ. The lungs were partially collapsed, and along their posterior borders were adherent to a tumor mass of the size of a large halved orange, lying firmly attached to, but not eroding, the vertebral bodies. There were several small nodules to the visceral pleuræ, freely movable beneath the membrane. The aorta passed through a groove in the anterior face of the tumor-mass in the posterior mediastinum, and the intercostal arteries plunged directly through it to reach their destination. There is no distinct statement as to the condition of these vessels, and one is led to infer that they were normal in all appearances. The left suprarenal body was enlarged, firm, dark in color, bossellated, and the seat of a slate-colored tumor growth; the right was also involved, but to a less extent. The liver and gall-bladder presented nodes of the same general appearance as those above described. The other organs were normal, the mesenteric and peripheral glands being uninvolved. Upon microscopic examination the subcutaneous nodules, the tumor mass in the posterior mediastinum, in the suprarenal bodies, and the small masses in the thymus, liver, and pleuræ, with the pulmonary tissue in the vicinity of these last, showed the characteristics of small, round-celled sarcomatous growths, of the variety described as lympho-sarcoma. On account of its size, and from the fact that there existed in the mediastinal mass areas of degeneration, the author is disposed to regard this as the primary focus; although the rarity of the suprarenal bodies as seats of secondary tumor-formation, and the widespread distribution of the small tumors suggest to him the possibility of an underlying general cause. Some weight is given this supposition by the early age at which the cutaneous nodules were first observed, and by the wide distribution of the tumors and the diversity of the systems involved. The early age of the patient is also remarkable in connection with the existence of a mediastinal neoplasm.

Filaria Bancrofti-Cobbold. (Ueber Filaria Bancrofti-Cobbold. *Centralbl. für Bakteriologie u. Parasitenkunde*, Bd. xii., Nos. 2 and 3.)

Dr. von Linstow, of Göttingen, in an article descriptive of the parasite known by the above name as well as by that of *filaria sanguinis hominis*, while commenting upon the apparent absence during daytime of the embryonic worms from the blood of the person affected, and their easily demonstrable presence during the night, does not accept the general belief that this is due to their generation at the close of cycles of twenty-four hours' duration, bearing definite relations to such circumstances of the day as light, heat, and nutrition. He attributes the phenomenon, on the

contrary, to the fact that the vascular tonus of the peripheral capillaries during the day causes their narrowing to such an extent as barely to permit of the passage of the red blood-cells (with an average diameter of 7.5 micromillimetres), but not to allow the passage through them of the embryonic parasites (with their smallest measurements varying from 7.8 to 10.4 micromillimetres). At night, however, the capillaries become wider, their dilatation corresponding to the establishment of the warmth and glow of the skin when protected during sleep, and to the increased tendency to perspiration; at this time it is possible for the embryonic filariæ to pass from the central circulation, where the author believes them to be constantly present, to the superficial circulation, whence they are drawn with the blood for microscopic examination.

CLIMATOLOGY.

IN CHARGE OF GUY HINSDALE, M.D.,
Lecturer on Climatology in the University of Pennsylvania, Philadelphia.

Prevalence of Atrophic Rhinitis throughout the Dry Belt of the United States. (*New York Medical Journal*, November 12, 1892.)

Dr. H. M. Wilson, Jr., of Pueblo, Colorado, points out the great prevalence of this affection throughout the arid regions. He rejects the well-known theory held by Bosworth that, in the presence of dry air suspending dust, the turbinated bones become covered with a film of discharge, which becomes thick, hard, and crusty, interfering with the nutrition of the membrane and producing the atrophy. Dr. Wilson believes that in Colorado the "irritants, dry air and alkali dust, act as might be expected of them,—the dry air intrinsically in demanding on the part of the secretory apparatus a larger amount of fluid, and the alkali dust by inciting to the parts a larger quantity of blood." The hypertrophic stage after a few months is succeeded by one of exhaustion and atrophy. The rapid hypertrophy is a natural effort to keep pace with the ever-acting stimulation, and its continuous increment of size is the measure of its failure. The limit reached, wasting ensues.

Secondarily the pharynx becomes involved. At first protected by the turbinated structures from the immediate causes of irritation, it finally loses this protection as atrophy takes place, and, when the turbinated bodies have shrivelled, the pharynx is more and more exposed to irritation. "This hypertrophy, occasioning endless annoyance, may, without correction, persist for years."

Pueblo is probably not more exposed than Denver or other cities of the plain to furious storms of dust. Those who have irritable throats should seek the hills and more protected sites if they wish to remain with comfort in Colorado.

San Antonio and Southwest Texas as a Winter Resort. (*Medical Record*, November 19, 1892.)

Dr. E. M. Littlejohn believes that San Antonio is unsurpassed as a winter home. The genial sunshine and the invigorating air, which is very dry and pure, prevent the enervating effect experienced at Southern resorts near the seaboard. The usual criticism of this region is that "northers" are liable to occur in winter. The author says on this point: "In reality these northers may be pretty cold when they enter the State from the north, but when they reach the neighborhood of San Antonio they are so thinned down and subdued that they cause little trouble, and the air is very dry and stimulating. Besides, they are only periodical, and at other times in winter the prevailing winds are from the southeast principally, which, of course, coming from the Gulf, as they do, are mild and pure and, at this distance inland, are practically free from moisture.

San Antonio has an altitude of about seven hundred feet, and is situated in an undulating country free from marshes or bayous, and with swift-running streams. In winter there is an average of fourteen days during which the temperature falls below the freezing point.

Catarrhal Sore Throat in the Lake Region. (*Journal of the American Medical Association*, November 12, 1892.)

Dr. J. M. G. Carter, from a long experience on the shore of Lake Michigan, has noticed that catarrhal disease of the respiratory tract is aggravated by increased ozone. The venous distention produced by cold, damp weather renders the throat more susceptible to the irritating influence of the dry air heavily charged with ozone which succeeds an easterly storm. The northwestern part of the lake region is not only in the track of the greatest number of storm-centres, but it is liable to repeated cold waves following in the wake of these storms. Every element for the production of throat-disease is at hand. Dr. Carter finds gargles of milk, shaved ice mixed with cream and a little sugar, sprays of oils, and, in croupous cases, medicated inhalations and cold compresses, to be of the greatest service.

The Climate of El Paso, Texas. (*New York Medical Journal*, November 12, 1892.)

Dr. E. Alexander earnestly advocates this locality in the treatment of phthisis and kindred diseases. Seventeen years of experience in El Paso enable him to speak with authority and persuasion. The altitude, three thousand seven hundred and sixty feet, renders El Paso a good place to begin the process of acclimatization to regions of greater rarefaction of air. The city lies just below the southern boundary of New Mexico on the Rio Grande, nearly half-way between San Francisco and New Orleans, and comprises a population of over ten thousand people. It is well known that in this region and throughout Western Texas and all New Mexico the air is exceedingly dry and pure; damp, chilly days and hot, sultry nights

are unknown; that no entire day has been known in which the sun and stars have not been seen; that "blankets or cover of some kind are necessary for all on nights which follow the hottest days, because the nights are cool though not damp." But the repeated claim that "equableness of temperature is the rule" and that "sudden changes are comparatively rare" is not warranted by the doctor's own observations. Equability of climate had better be relegated to Florida, to the Gulf and ocean seaboards, and to the islands of the sea. No resort in the interior of Texas, New Mexico, or Colorado ever did or ever can have an equable clime, nor would it be to their advantage to have it. Their sunshine would give place to cloud and rain and there would be little to relieve the intense and sultry heat of the day.

REVIEW OF ITALIAN, SPANISH, AND PORTUGUESE MEDICINE.

IN CHARGE OF A. M. FERNANDEZ DE YBARRA, M.D.,

Corresponding Member of the Medico-Chirurgical Academy of Madrid, Spain, the Argentine Medical Circle of Buenos Ayres, South America, and the Society for Clinical Studies, of Havana, Cuba.

Chronic Farcy Cured by the Mixed Mercurial Treatment. (*Revista de Ciencias Médicas*, Havana, May 20, 1892.)

Although human glanders is a very rare disease in the United States, to such a point that some excellent American text-books fail to mention it, the following extract will be found of some interest as a contribution to the possible relation of glanders to syphilis.

Dr. Esteban Borrero Echeverria had occasion to observe, some years ago, a boy of fifteen who had been sick eight days with glanders, presenting inflammation of the joints, a muco-sanguinolent discharge through the ulcerated nostrils, enlargement of all the glands of the neck and some of the thorax, a cold abscess in the left arm near the elbow, profuse and fetid diarrhœa, tongue dry and black, like a person suffering with septicæmia. This boy was employed on a farm near Havana, where he took care of several horses and mules, some of them sick with farcy, and acknowledged having drank water in the same pail used for the horses. The axillary temperature was 40° C., and the patient was in an adynamic condition when the author saw him. After opening the cold abscess of the arm, he ordered a gramme of calomel in two powders, to be taken with an interval of two hours, and followed two hours after the last one by a purge of thirty-five grammes of sulphate of sodium, nasal douches with carbolized water almost continually, an alcoholic mixture of soft extract of cinchona, and frictions with mercurial ointment to the swollen glands. The following day, all the symptoms having subsided, iodide of potassium was given, eight grammes in two hundred grammes of water, to which ten centigrammes of pure iodine were added, to be administered in tablespoonful doses; the mer-

curial inunctions were applied from that time over the entire body. The patient was cured.

This case suggested to Dr. Borrero the same mixed treatment in a chronic case of farcy of several months' standing in another boy employed in a blacksmith shop, who was prostrated in bed, without nasal discharge (*jetage*), but having about two dozen suppurating abscesses in the neck and feet, the elbow- and ankle-joints ankylosed, and in a general state of marasmus. There were given to him, internally, four grammes of iodide of potassium with iodine daily, two Ricord's pills every night, and tonics; externally, vaseline with calomel to the suppurating abscesses, and mercurial ointment rubbed on all the inflamed joints. Ten days after, the patient left his bed and began to walk, and at the end of a fortnight was declared to be cured, having still, nevertheless, three or four abscesses yet open, which finally cicatrized.

A Case of Acne caused by Bromism. (*Archivio italiano di pediatria*, vol. x., No. 4, July, 1892.)

The author of this paper, Dr. Demetrio Galatti, although an Italian by birth, is one of the attending physicians at the Children's Hospital of the eleventh district of the city of Vienna. The case he reports in his native language is very interesting for its rarity, and difficult to diagnose on account of the great resemblance of the eruption to some syphilitic or scrofulous skin affections. A chromo-lithographic plate accompanies the description, and permits an accurate judgment in regard to the true nature of the disease.

The patient was a child, six years of age, who, on account of her suffering hystero-epileptic fits, had been taking the bromides of sodium and of ammonium for about five months. Not having then felt any better, the medicine was discontinued. Three months after, the urine was examined and found to contain a notable quantity of bromine. The exanthema was in the legs.

Dr. Galatti scraped the pustules, and the second time he practised this operation succeeded in removing all the scurf. He took beforehand all necessary antiseptic precautions. At the end of three weeks of treatment, during which time the child's legs were bathed every day in a tepid bath with corrosive sublimate (one gramme in ten thousand grammes of water), the patient was cured. The old nervous affection was also very much relieved.

The lesson to be drawn from this instructive case is to always bear in mind that children are much more sensitive to the action of remedial agents than grown-up people, and to be, therefore, very cautious in the administration of drugs to them. The formula of the potion that caused the bromism was the following:

℞ Bromide of sodium, 20 grammes;
Bromide of ammonium, 4 grammes;
Distilled water, 200 grammes.

Dose.—A tablespoonful in a glassful of sugared water once a day.

FORENSIC MEDICINE.

IN CHARGE OF LORENZO D. BULETTE,
Of the Philadelphia Bar.

LEGAL LIABILITY OF A CORPORATION TO COMPENSATE A PHYSICIAN CALLED IN BY IT TO ATTEND AN INJURED EMPLOYÉ.

THE general rule is that where a person requests the performance of a service and the request is complied with and the service performed, the law raises an implied promise to pay the reasonable value of the services; but this rule is not applicable where a person requests a physician to perform services for a patient, unless the relation of that person to the patient is such as raises a legal obligation on his part to call in a physician and pay for his services. Accordingly, where an employé of a corporation was injured while at work, and the superintendent of the corporation caused a surgeon to be summoned to attend him, it was held that the corporation was not liable for the services of the surgeon, in the absence of evidence that its superintendent had been authorized by it to summon medical aid in a case of emergency.

This was decided in Meisenbach *v.* Southern Cooperage Company *et al.*,[1] which was an action brought by a surgeon to recover the reasonable value of his services in and about the treatment of E., who was severely injured while employed by the defendant corporation. The defendant, F., was the superintendent of the corporation. At the close of the evidence at the trial, the court instructed the jury that the plaintiff could not recover, and the only question for consideration on appeal is, whether this was a proper direction.

There was no evidence as to the character or powers of the corporation, and no specific evidence as to the scope of the authority of F., except that he was superintendent, and, to use the language of a witness for the plaintiff, "managed the whole thing himself." The evidence was to the effect that E., having received a severe injury at the defendant's works, the superintendent ordered another employé to go for the plaintiff, a physician. The superintendent did not tell the messenger that either he or the company would be responsible for the services of the plaintiff. He merely sent him to get the doctor. When the plaintiff arrived at the company's works, W., who was president of the company, F., the superintendent, and also the patient were there. The patient was very pale, wrapped up in some way, and covered with blood. He was not unconscious. The plaintiff told W. that the plaintiff's arm would have to be amputated, and that they would

[1] 45 Mo. App. 232.

have to take him to his home. Soon after another physician, who had been telegraphed for, arrived. The plaintiff and this other physician, the patient having been removed to his home, amputated his arm, the plaintiff performing the operation. The arm was so lacerated that it had to be taken out at the shoulder-joint. The plaintiff attended upon the patient for several months, during which time he never communicated with the defendant corporation, or with F., about the question as to who was to be responsible for the payment of his fees; he had no distinct understanding with either on that question. He afterwards had some conversation about the matter with W., who told him that the company would pay him for his first services, by which we understand his first call, but he denied all further liability on the part of the company.

Mr. Justice Thompson, in delivering the opinion of the Court of Appeals affirming the judgment of the lower court, said, "We take it that the law will not imply, upon this evidence, a contract, either on the part of the corporation or on the part of F., the superintendent, to pay for these services. The general rule, no doubt, is that where a person requests the performance of a service, and the request is complied with and the service performed, the law raises an implied promise to pay the reasonable value of the services. But this implication does not obtain where one person requests a physician to perform services for a patient, unless the relation of the person making the request to the patient is such as raises a legal obligation on his part to call in a physician and pay for the services. Where a husband calls in a physician to attend upon his wife, or where a father calls in a physician to attend upon his minor child, the law implies a promise on his part to pay the reasonable value of the services, because there is a legal obligation on his part, in either case, to furnish necessaries for the patient's benefit. But no such implication arises where one calls in a physician to attend upon a stranger, or upon one to whom there is no legal obligation to furnish necessaries. It has even been held that a special request by a father to a physician to attend upon his son, then of full age, but lying sick at the father's house, raised no implied promise on the part of the father to pay for the services." And, also, where an action was brought by a physician against a father for the value of medical services rendered to a daughter who was sick at her father's house, it was held that the father was not liable under the following state of facts: The daughter was of age, and was married and living with her husband. She was brought from the husband's house to that of her father, in order that she might be under the care of her mother; the father was present when the physician made his calls, gave the latter a history of the patient's troubles, and received directions as to her treatment. He told others of the frequency and length of the physician's visits, and of his opinion of the case, without any disclaimer of liability. It was held that these facts were insufficient to imply a promise on the father's part to pay for the medical services. Nor would the additional facts that the father had assented to

the calling in of a consulting physician; nor that a bill was sent in, unless acknowledged or acquiesced in by him; nor the fact that he had employed other physicians, be sufficient to fasten such a liability on him.

It is true that a person may not avail himself of the benefit of services done for him, without coming under an obligation to pay a reasonable recompense therefor; but he cannot be said, in the meaning of the law, to avail himself of services as so done when they are not for his individual benefit, nor for that of any one for whom he is bound to furnish them. The acquiescence of one in the rendering of service or benefit to another not entitled to call upon him therefor is not equivalent to an acknowledgment that it is rendered at his request. So far, therefore, as legal responsibility was concerned, the father of the patient was a stranger to her and to her necessities. He could neither require of her, nor be required upon by her.

And the court, continuing, says:

"The reason and policy of this rule are obvious, especially in cases like the present. When a person is dangerously wounded, and perhaps unable to speak for himself, or suffering so much that he does not know how to do it, any person will run to the nearest surgeon in the performance of an ordinary office of humanity. If it were the law that the person so going for the surgeon thereby undertakes to become personally responsible for the surgeon's bill through the long subsequent course of treatment, many would hesitate to perform this office, and in the mean time the sufferer might die for the want of the necessary immediate attention. Nor is there a common and fair understanding that the person making the request, or ordering it to be made, in behalf of the sufferer, under the circumstances, assumes responsibility for the surgeon's bill. In this case, if it had been the expectation of the plaintiff to hold either the corporation or its superintendent liable for this bill for the entire course of treatment, an obvious suggestion of business prudence would have required him to communicate with them, and have an understanding on the subject.

"The offer of W. to pay for the first part of the services, which is understood to mean for the first visit, or what was done on the first call, can be construed as no more than in the nature of an offer to compromise, and not as an admission of legal liability. His offer was made after the services had been rendered; it did not involve the admission of any distinct fact upon which the law predicates a liability on the part of the corporation to pay for the services; and it is not, therefore, evidence upon which the court could have submitted such a liability to the jury."

From these cases it will be seen, therefore, that it is the duty of the physician to know or to learn the true legal status of the patient, and what are the latter's true legal relations to the person upon whom he seeks to fasten a liability for his professional services. He cannot rely upon any seeming legal and necessary dependence of his patient upon the person calling him in.

BOOK REVIEWS.

MOTHER AND CHILD. Part I., the Mother, by Edward P. Davis, A.M., M.D. Part II., the Child, by John M. Keating, M.D., LL.D. Philadelphia: J. B. Lippincott Company, 1893.

It is the aim of this book to supplement the advice of the family physician and render intelligible those matters that mothers and nurses find difficult to understand. The large experience of the writers makes their efforts in this direction of special value, and the book will at once prove useful to a large class of the community.

In dealing with the first part, a great deal of common-sense advice is given in regard to the proper care of health in girlhood, at the period of puberty, and during womanhood. The general public is but poorly informed on these matters, and the physician's visit in times of anxiety is necessarily too brief to give all the details that are required. The book lays special stress on the hygiene of womanhood and pregnancy, and gives full details in regard to diet, exercise, and clothing, the proper bathing of the person, and care of the nervous system in the latter condition, the evident maximum of the whole being that "an ounce of prevention is worth a pound of cure." A number of useful appliances both for the mother and the child are carefully described, so that all may take advantage of these little devices. It is interesting to see how small details like the application of a binder and the manufacture of pads for the parturient woman are treated. Too much stress cannot be laid on these apparently minor points, which are so often neglected or left to a friend of the family to arrange. Illustrations of the patient's bed prepared for labor, before and after the birth of the child, and several drawings of special apparatus add to the value of the text.

By far the larger portion of the book is devoted to the child and has been treated in a very practical manner, from the care of the new-born infant to directions for treating the varied diseases to which it immediately becomes liable. The sterilization of milk and the care of the nursing-bottle are described in a way that is very easily understood, and simplifies a method of procedure that must seem most complicated to the majority of primiparæ. The directions for the preparation of a bottle when the mother's milk fails are simple and efficient, and the author mentions a mixture which in the large majority of cases would prove of inestimable value. Fresh cow's milk is recommended instead of condensed milk whenever it is possible to get the former, and the latter is only to be used in an emergency. They believe that the kindergarten system of education serves as an admirable initiation to more elaborate methods, and tends to interest the little one, while it gradually educates its mind in the proper methods of thought, and teaches it to observe, reason, and express its thoughts. They believe that mental and physical development should go hand-in-hand, as any overbalance in favor of one or the other would lead to disease. Such matters as dyspepsia, headache, nervous derangement, chorea, epilepsy, neurasthenia, backache, disordered menses, and consumption obtain each an explanatory half-page or so. Spinal deformities and the way in which they are frequently encouraged by the improper use of desks and seats at school are very carefully considered, and, if for no other reason, this little book may be conscientiously recommended in the highest

terms for the sound advice embodied in these pages. Diseases of the eye, physical training, the proper routine of a school-day, ventilation and heating of school-rooms, and even drainage and sewerage are considered. An excellent chapter on contagious diseases should prove a boon to the mother's inquiring mind, and these important affections are classified in such a way that the average parent could almost make a diagnosis without the aid of the doctor. Surgical emergencies, and the performance of artificial respiration, the treatment of cuts, bruises, loss of consciousness, the effects of unusual heat or of cold, and the proper method of antidoting poisons are considered carefully. A great deal of importance is attached to the usefulness of fresh air, proper ventilation, regulated out-of-door exercise, and systematic bathing. Teething and the diet after early dentition each receive a chapter, and the remainder of the book is devoted to the consideration of a number of the more common complaints of childhood, together with the nursing of sick children. A few simple directions are given in regard to the treatment of acute and chronic nasal catarrh.

The chapters on diseases of the eye and ear have been contributed by Dr. Charles S. Turnbull, of Philadelphia, and embody a great number of practical points. Dr. Turnbull lays special stress upon the appearance of the "dread ophthalmia" of the new-born and the importance of beginning the treatment promptly. He considers that modern kindergarten systems, as a rule, develop eye-defects and damage children's eyesight. "No child should go to school before the seventh year." In regard to the ear, his advice to the mother is that soap and water are poisonous. In cleansing discharging ears never use anything smaller than the little finger in wiping the auditory canal.

His method of inflating the middle ear in children of tender years is an eminently practical one: having won the child's confidence, an ordinary otoscope is placed in the nostril of the side to be treated, while the other end is placed in the mouth of the physician. The other nostril of the child is closed with the finger, and the little patient is induced to give a series of puffs or blows, during the performance of which the physician gives a forcible simultaneous blow which forces the air up the Eustachian tube into the middle ear. His course of treatment is an eminently conservative one. He believes that eight out of ten cases of oral disease are due to nasal obstruction.

This thoroughly practical little book concludes with a consideration of diseases of the throat and air-passages, such as croup and whooping-cough, and then of scarlet fever, measles, and chicken-pox. A complete index makes reference to the text very easy. That the authors have accomplished their task with credit will soon be made evident, no doubt, by the appearance of a new edition.

A Manual of Clinical Ophthalmology. By Howard F. Hansell, M.D., Lecturer on Ophthalmology in the Jefferson Medical College; Chief Clinical Assistant in Eye Department, Jefferson Medical College Hospital, etc., and James H. Bell, M.D., lately Demonstrator of Anatomy in Jefferson Medical College; Member of Ophthalmological Staff, Jefferson Medical College Hospital, etc. Small 8vo., pp. xiv, 231. Philadelphia: P. Blakiston, Son & Co., 1892.

We have read this little work from cover to cover with pleasure. The subject-matter, which is most comprehensive and just what the student should know, is given in such a terse and succinct manner that no one can fail to cull many truths and practical hints from its perusal.

As a rule, the illustrations are sufficiently clear, precise, and numerous to adequately explain the text, and on the whole they compare more than favorably with those of many other books of a similar nature. The chromo-lithographic frontispiece of the normal fundus is exceptionally good. The credit that McHardy receives for Priestley Smith's perimeter on page 38, and the reversal of the cut showing Morton's ophthalmoscope on page 64, can be easily remedied in the future.

We can unreservedly recommend this book to all who are interested in the first principles of Ophthalmology, and to those who desire a clear and concise account of the practical side of the question. Written for the undergraduate and the general practitioner of medicine, it meets a want here in America comparable with that offered by Nettleship's Guide to the English Student.

We hope for an early and successful second edition.

THE RULES OF ASEPTIC AND ANTISEPTIC SURGERY. A Practical Treatise for the Use of Students and the General Practitioner. By Arpad G. Gerster, M.D., Professor of Surgery at the New York Polyclinic, Visiting Surgeon to Mt. Sinai Hospital, and the German Hospital, New York. Third Edition. New York: D. Appleton & Co., 1891.

This is not intended to be a complete text-took of surgery, but it is intended to illustrate the great practical changes that the adoption of aseptic methods has caused in surgical procedures. It is especially thorough in operative technique, and presents a vast amount of practical knowledge. The several steps of each operation are carefully detailed, and the reader feels as if he were actually present at the instructive clinic of the experienced author. The necessity for issuing within two years a third edition of the book shows the popularity of its doctines and the good opinions they have established for themselves by their sound common sense. No elaborate experiments are quoted or bacteriological investigations detailed, but the book deals with all those matters, both large and small, with which every practical surgeon is concerned.

This new edition differs from the old somewhat in the chapters on herniotomy, hæmorrhoids, appendicitis, and the surgery of the kidneys, while the conclusions drawn in these chapters have been enriched by the additional experience of two years' work. After devoting twenty pages to aseptic treatment and the proper method for securing *asepsis* the author takes up the subject of "soiled wounds" and the difference between aseptic and antiseptic methods. Special rules are laid down regarding the treatment of accidental wounds, and simple methods recommended which may be employed when more elaborate apparatus is not at hand. Cases are detailed where asepsis was secured by these means under the most unfavorable circumstances. Dry dressings are recommended where the formation of a blood clot is desired, and moist dressings where the surgeon wishes to prevent inspissation of the secretions and clogging up of the drain. In speaking of the extirpation of tumors, the author believes that whenever the surgeon has succeeded in forming a pedicle to a tumor situated in the vicinity of large vessels, the cutting of such a pedicle without first tying it off is a very risky step. Instances are cited where neglect of this precaution resulted disastrously, although the author succeeded in one case in tying a rupture in an injured vein by a lateral ligature and continuous suture.

Dr. Gerster believes that in order to accomplish a thorough and at the same time a safe removal of a tumor located in the vicinity of large vessels, a very ample incision is absolutely necessary. We are glad to see that he discountenances the tearing open of the deeper tissues after a smaller and therefore ineffectual primary incision. The three hundred and fifty pages are equally divided between aseptic and antiseptic surgery, and under the latter head, after some general considerations and remarks on special inflammatory conditions, the great principles of antisepsis are directed against tuberculosis, gonorrhœa, and syphilis. While no one part of this carefully-written book can be picked out for more praise than another, the portion devoted to appendicitis is particularly good. This subject, as well as intestinal anastomosis, is treated concisely, practically, and thoroughly. Enforced as the author is by his thorough knowledge of aseptic methods, and equipped with every appliance to carry them out, it is interesting to note that he takes a very conservative view of exploratory laparotomy. He believes that it is only justified where, in the presence of

a disorder threatening life, all known means for establishing a diagnosis have been exhausted without positive result, or where ocular inspection and digital examination are absolutely necessary to establish the exact extent and relations of a mechanical disturbance. This for two reasons: "First of all, no surgeon is absolutely secure in his practice against accidental and unexpected, often unexplained, wound infection. Secondly, the dangers of anæsthesia and of conditions indirectly caused by it, as nephritis, pneumonia, thrombosis, and embolism are ever present, and usually surprise the surgeon when least expected."

While the practical value of this instructive book is undoubtedly due to the clear and comprehensive treatment of the subject by the author, his teachings are greatly enhanced by the numerous illustrations which accompany the text. It is illustrated with two hundred and fifty-two engravings, and three chromo-lithographic plates. In parts so much is expressed by these photographs that it becomes almost unnecessary to read the text. Certain it is that those who have not the privilege of attending surgical clinics at any of the great seats of medical learning should secure this book. It is thoroughly abreast of the times and eminently practical. No well-equipped library should be without it. The typographical work is beyond reproach, and the publishers deserve great credit also for the handsome paper and excellent illustrations of this valuable book.

MEDICAL AND SURGICAL GYNÆCOLOGY. By S. Pozzi, M.D. Translated from the French by Brooke H. Wells. 2 vols. New York: William Wood & Co., 1892.

A review of this book appeared in the last number of this Magazine, but the reviewer omitted to state that the new matter in the second edition, which has just appeared in France, was translated, with the additions, by the author for the American edition, to which the review referred.

PRACTICAL MICROSCOPY; A Course of Normal Histology for Students and Practitioners of Medicine. By Maurice N. Miller, M.D., Director of the Department of Normal Histology in the Loomis Laboratory, University of the City of New York. Illustrated with one hundred and twenty-six photographical reproductions of the author's pen-drawings. Second edition. New York: William Wood & Co., 1891.

This work appears to be a reprint of the edition of 1887, rather than a "second edition," as claimed.

While unquestionably subordinate to the well-known works of Schäffer and Klein, it is a very good text-book of normal histology, giving in a clear-cut manner the essentials of the topics discussed. Sufficient of the *technique* of microscopy is given to allow one unfamiliar with the microscope and its manipulations to do very creditable work. The manner of teaching is very clear and to the point, some matters, such as the diagrams of the arrangement of dishes for staining reagents, approaching the "*kindergarten*" type of instruction; but others, as the directions for observing a specimen, which form a sort of combined suggestion and description, following the more complete description of the regular text, are among the best things the book contains.

The illustrations, whose claim to be "photographic reproductions" is a vain boast, are better than if really photographs, for we cannot but judge, from the large number of books now at hand, that clear, plainly-drawn diagrams have much advantage over photographs, in that they are made to emphasize certain important points, and are not hampered with a mass of useless detail, which photographs invariably present.

The best recommendation which we can give this book is to say that the more we read it, the better we liked it, and that we kept on reading it to the end.

THE PRINCIPLES AND PRACTICE OF BANDAGING. By Gwilym G. Davis, M.D. (Universities of Pennsylvanla and Göttingen), Member of the R. C. S., England; Assistant Demonstrator of Surgery, University of Pennsylvania; Surgeon to the Out-Patient Departments of the Episcopal Hospital and Children's Hospitals; Assistant Surgeon to the Orthopædic Hospital. Detroit, Mich.: George S. Davis, 1891.

No more thorough or carefully prepared book on bandaging has ever been published. The author believes that while the number of bandages that have been invented is so numerous that a precise knowledge of them all would be impossible, every one should at least know the fundamental principles and be able to apply them skilfully. Numerous illustrations have been added to the text, in order to make the description more easily understood. These illustrations have the advantage of being line-drawings, more or less diagrammatic, and therefore readily understood, but they lack the finish and beauty of engravings from photographs. No book on bandaging that we know of describes at such length the handkerchief bandages, or illustrates them more freely. Great credit is due Dr. Davis for the care and attention he has given this subject, and a number of devices and methods of procedure, either introduced by himself or snatched from oblivion after careful research, are modestly inserted in the text without any flourish of trumpets. The book is a scientific production, and gives proper credit to the surgeons for the bandages or dressings which they have introduced. Its aim, however, is eminently practical, and the student must be very stupid indeed who cannot acquire much valuable information from its pages. It is a matter of regret that such an excellent book should not have been bound in a more practical style, so that it might be carried by the student in his pocket. Certainly the size of the drawings would not prevent smaller pages. The type employed for its production has seen service too long, and even a careless proof-reader would mark numerous x's on the margin if the book were submitted to him now as page-proof. This defect in the type is particularly noticeable on the dedication-page, where one of the eminent surgeons to whom the book is inscribed makes a bow to the public with a very much dilapidated capital letter. Apart from the typographical errors and the inconvenient size of the volume, this book is worthy of all praise. Many practical points on the application of the roller bandage are contained within its pages, and the text leaves little or nothing to be desired in the way of explanation. The medical student of to-day is very fortunate in having three such books as Hopkins' on the Roller Bandage, Wharton's Minor Surgery, and this little book to aid him in acquiring the art of bandaging.

NOTE TO CONTRIBUTORS.

Manuscript accepted will be liberally compensated or reprints furnished in lieu of such compensation.

It is distinctly understood that all articles accepted are for our exclusive use and are not to appear in any other publication.

All matters of business and subscriptions to be sent to the Publishers. Manuscripts and books for review should be addressed to the Editorial Office, 319 South Eighteenth Street, Philadelphia. EDITOR.

INTERNATIONAL
MEDICAL MAGAZINE.

Vol. II.] MARCH, 1893. [No. 2.

ORIGINAL COMMUNICATIONS.

SLEEP.

BY ROBERT BELL, M.D.,
Glasgow, Scotland.

Sleep, as the poet has designated it, "nature's sweet restorer," is one of those psychological conditions which seem to constitute a link between life and death. The actual condition of sleep, however, appears to be a phenomenon which is most difficult of explanation. If sleep is sound and undisturbed, all the sensory functions of the body appear to be in complete abeyance, while the animal organism continues to perform its various functions with renewed vigor. It is, in short, complete rest from nervous and mental activity, and by it all the functions of the body recover from the fatigue which they have been undergoing, and the system at large seems to accumulate fresh vigor and energy for the work it has to perform. The condition of sleep may be described as a period of unconsciousness, so far as the motor and sensory powers are concerned, and in which the organic functions relating to nutrition, circulation, and respiration concentrate all the powers of the economy in the performance of their various duties. In this condition the various functions which are essential to life seem to become refreshed and their activity invigorated, while the muscles and thinking powers, in consequence of their nutrition being increased at the same time that their energies are not called into play, regain strength, vitality, and power which had been previously impoverished by the fatigue which they had undergone. It is difficult to explain what is the actual physiological condition of the brain and of the sympathetic nerves during the

epoch of sleep. It would appear, however, from analogy and from inference, that they are not in a state of anæmia, as has so often been supposed, but rather that their blood-supply is quite as copious as during the period of wakefulness, and that the brain is absorbing more actively the contents of the blood peculiarly adapted to its own particular requirements, and thus laying in a store for the expenditure which it will be called upon to make in the hours succeeding the repose which it has been indulging in.

It has been stated that sleep is the consequence of exhaustion of the usual nervous stimulant which has been exercised in the waking hours. Would it not be very much more natural to suppose that sleep is of the same nature as hunger, and that the nervous apparatus requires food to enable it to recuperate itself after a considerable fast? Sleep, in short, seems to act much in the same way upon the nervous system as food does to the physical frame, or rest does to the fatigued body, the first and the last, however, taking advantage of the functions of digestion and assimilation, and abstracting from these the portions of nourishment which are essential to the requirements of their different structures and in their recuperation from the fatigue which they have undergone. It seems to be beyond doubt that the nervous and muscular systems take advantage of rest and sleep to enable them to devote their powers to the absorption of nourishment, as it is impossible for them to attend to their own requirements during the periods in which they are in action and under the control of the will of the individual. Sleep, however, or what corresponds to sleep, may be the result of circumstances quite independent of fatigue; it may, in fact, supervene upon exposure to intense cold, or to the action of certain drugs which obliterate the sensations, but which at the same time interfere with the action of the nutritive forces,—viz., the absorption of nourishment to provide for the future requirements of the body and for its invigoration. Hence such sleeps are liable to end in death, if the causes which have produced them are sufficiently energetic, or if proper measures have not been adopted to avert the fatal consequences. Thus we know that exposure to severe cold produces a drowsiness by paralyzing the nervous system; also that drugs, such as opium and other narcotics, produce a similar effect if the dose has been sufficiently large, or if the vital powers are not sustained or excited by proper remedies until the effects of the poison have passed away.

Many substances have been brought into use with a view of inducing sleep when nature's efforts have been unavailing, or when the nervous excitement present has frustrated these efforts. The most useful of these agents is sulphonal, which seems to act in such a manner as to render the nervous system oblivious to the conditions which preclude sleep, and thus enables nature to step in and supply the long-felt want. The sleep thus produced, although probably artificial at first, seems to merge into natural slumber, and thus the bodily requirements are supplied, the energies of the individual resuscitated, and the body refreshed. Other substances, such as chloral, chloralamid, bromidium, etc., have also some considerable reputation

in sleeplessness, yet they do not seem to exercise the beneficial effects which sulphonal undoubtedly does.

The amount of sleep varies very much, the infant requiring the most; indeed, its life should be made up pretty much by sleeping and drinking during the first six or eight months of its existence. As time advances, however, the time necessary for refreshment by sleep becomes gradually less, the adult requirements being from six to eight hours, but many indulge in a longer period of rest. Six hours, however, may be considered quite sufficient for any one in active exercise and good health, but there is a kind of enjoyment in the indulgence of sleep, which is very liable to be taken advantage of and made the excuse for a longer period in bed than is actually necessary. It is of great importance that an individual whose mind and body are actively engaged can take advantage of snatches of repose at any convenient time, and many men whose brains have been the most active have possessed this peculiar faculty, which has served them in good stead in many emergencies. Among these may be mentioned Napoleon and other generals and admirals who could not take advantage at regular times of indulging in a long period of repose.

It is a curious circumstance that sleeplessness is often the effect of a too active and energetic exercise of the mental faculties. The mind seems to be unhinged by the excessive strain which is brought to bear upon it, and in consequence is unable to settle down to the rest which is so essential to it. Over-indulgence in stimulants, also, by exciting the nervous apparatus, in many instances destroys the power of sleep, and hence aggravates the mischief which the poison has already produced. In many instances sleeplessness, when not due to these factors, is caused by an absurd idea that it is wrong to take food before going to bed, whereas, if such individuals would indulge in a slight refreshment before retiring, they would find that their sleep is not only more refreshing, but also more easily procured, and becomes more lasting if the stomach contains a little light nourishment. Many people who waken at certain hours of the morning and are unable to fall asleep again would do well to take a little food, such as the white of an egg switched up with a little milk, or even a drink of milk itself, and they would find that sleep, which before had been courted in vain, would come without any difficulty. Others, again, who sleep with their mouths open, and therefore necessarily induce a dry condition of the mucous membrane, would, by simply getting out of bed and taking a drink of water, enable sleep to take possession of them, for which, probably, they had been wishful for a considerable time before adopting this very simple device. Sleep is, however, frequently disturbed by the presence of some foreign matter within the alimentary canal. This is especially the case in children who are troubled with worms, or who are subject to constipation. In these circumstances the sleep is not only interfered with, but actually disturbed by terrible dreams, which may in many instances assume the character of delirium, and this is usually accompanied by a high state of fever, which

was in olden times called remittent fever. When this is the case it will be found that an enema composed of a dessert-spoonful of salt, dissolved in a breakfast-cupful of warm water and injected well up into the bowel, will have an almost immediate effect in alleviating the painful and alarming symptoms.

Somnambulism, or sleep-walking, is a condition of the nervous system brought about by some irritant within the digestive tract, and is almost invariably due to indigestion or a sluggish condition of the lower bowel. People who are addicted to such a disagreeable and dangerous habit should be particularly attentive not only as to their diet, but to the condition ot their digestive organs and to the state of their bowels.

INTRACRANIAL HEMORRHAGE: TWO CASES TREPHINED.[1]

BY J. W. ELLIOT, M.D.,

Boston, Massachusetts,

Assistant Instructor in Clinical Surgery at Harvard University; Surgeon to Out-Patients at the Massachusetts General Hospital.

CASE I.—MIDDLE MENINGEAL HEMORRHAGE IN A CASE OF EXTENSIVE FRACTURE OF THE RIGHT SIDE OF THE SKULL, INVOLVING THE BASE; TREPHINING AND LIGATURE OF THE ARTERY.—RECOVERY.

On July 5, 1892, the patient, a sailor, aged sixteen years, fell from his ship on to a wharf, a distance of about twelve feet. He was picked up unconscious, but partially regained consciousness on the way to the Massachusetts General Hospital, where he was brought about half an hour after his injury. On being pinched (at 7 P.M.), and on supra-orbital pressure, he said, indistinctly, "Don't." He could be roused when shaken, and looked up with enough intelligence to recognize a friend, immediately dozing off again. The pulse was fairly strong at 68; respiration quiet, 20 to the minute. There was hemorrhage from the right ear and from the nose and mouth. There was no paralysis, but he responded more slowly when pinched on the left foot than on the right. The reflex at the knee was slightly more exaggerated than on the left. There was a small scalp-wound near the right parietal eminence. The ear was syringed with a solution of corrosive sublimate (one to four thousand), and the patient was left on the accident-room table for observation.

At 7.45 the pulse is 56, and somewhat halting. The patient is roused with a little more difficulty. The right pupil responds more slowly; breathing is a little more noisy. The tongue is protruded to the left side; the patellar and plantar reflexes are diminished on the left side.

8.15.—Pulse 52, and somewhat retarded. The right pupil responds very slowly to light. Respiration shows distinct signs of expiratory difficulty. The cheeks are puffed out on expiration. The patient can be aroused only with extreme difficulty.

---

[1] Read before the Surgical Section of the Suffolk District of the Massachusetts Medical Society.

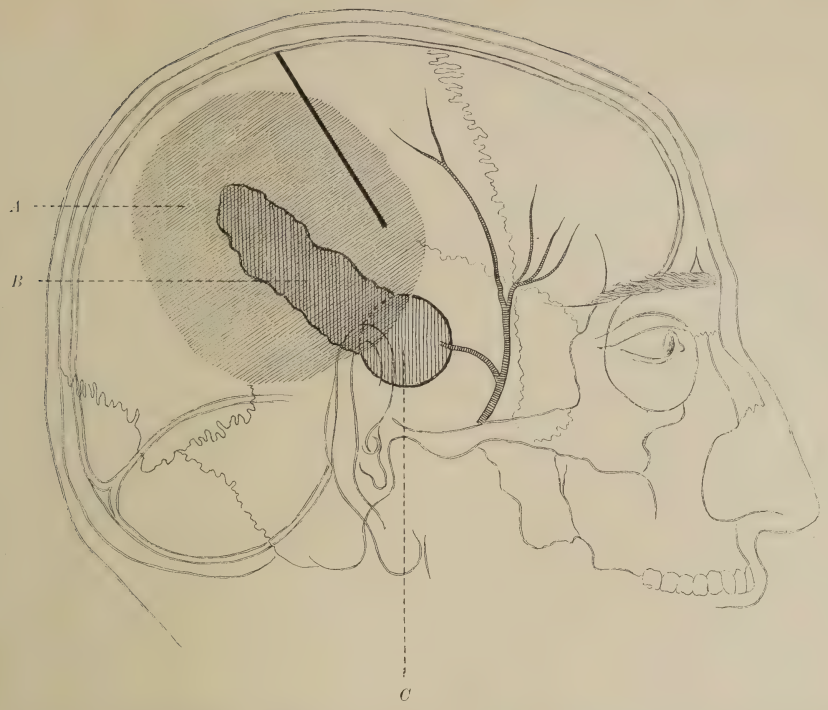


FIG. 1.—MIDDLE MENINGEAL HEMORRHAGE, operated upon July 5, 1892, by J. W. Elliot, M.D.—*A*, hæmatoma; *B*, extension of trephine opening; *C*, trephine.

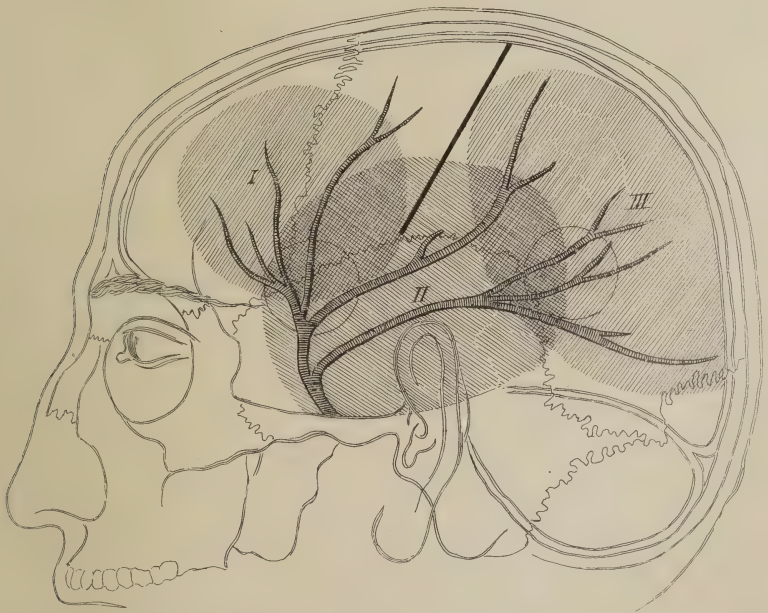


FIG. 2.—*I*, hæmatoma, fronto-temporal; *II*, hæmatoma, temporo-parietal; *III*, hæmatoma, parieto-occipital. (Krönlein.)

8.30.—The right pupil does not react. Pulse is 46, and much retarded. Respiration more noisy, though not yet stertorous. He moves all his limbs.

8.45.—Neither pupil responds to light; the right is slightly more dilated than the left. Pulse is 42. Respiration beginning to be stertorous. The patient cannot be roused.

8.55.—For ten minutes there has been restlessness of the limbs, most marked in the left arm. Pulse 40. Distinct expiratory stertor. The right pupil is dilated one-half, the left slightly dilated. The patient's head was shaved and a surgeon sent for.

9.15.—The stertor is becoming very well marked. The patient is in deep coma. Respiration 28, and pulse 40. He has general adductor convulsive movements of the arms, his legs kick out irregularly. Right pupil is dilated,—much larger than the left.

[The above symptoms were recorded by the house pupils, who were quick to recognize the importance of the case.]

I arrived at the hospital at 9.45 P.M., about four hours after the accident had occurred, and found the patient with a small scalp-wound over the right parietal eminence and bleeding from the right ear and mouth. As stated above, he had been picked up unconscious, but had partially regained consciousness by seven o'clock, when he arrived at the hospital. Between seven and nine o'clock his pulse had fallen from 68 to 40; his respiration had risen from 20 to 28; his pupils had ceased to respond to light, and the right one had become dilated. He had had convulsive movements and had sunk into deep coma. These were very evident symptoms of progressing brain-compression. The dilatation of the right pupil and paresis of the left side suggested that the pressure was on the right side. The bleeding from the ear and mouth suggested fracture of the base on the right side. Middle meningeal hemorrhage was therefore thought probable, and severe brain-laceration seemed also probable.

Operation.—Ether was unnecessary, owing to the deep coma. Mucus had already begun to impede respiration and was sponged from the throat. An incision was made from the scalp-wound to a point just in front of the right ear. This revealed a linear fracture of the skull, running from near the parietal eminence down through the temporal bone, which was comminuted above the auditory meatus, but not depressed. The scalp was freely reflected back. An inch trephine was so placed that, while including the comminuted part of the temporal bone, one portion of the disk would cut half an inch above the zygoma, thus giving access to the lower part of the middle fossa, and another portion of the disk would nearly reach a point one inch and a half above the zygoma and one and one-half inches behind the external angular process of the frontal bone, the point of election of the middle meningeal artery. The trephine opening was fortunately placed, for as soon as the disk was removed a quantity of liquid blood gushed out, and I saw at once the black edge of a large blood-clot and a branch of the middle meningeal artery spurting from the dura, which had been extensively torn from the skull. The artery was tied by passing a curved needle through the dura. The opening was enlarged with rongeur forceps, and a clot as large as a fist was removed with the fingers and a spoon. The brain was compressed more than an inch below its normal level, and did not return when the clots were removed, consequently this large space between the dura and the skull immediately refilled with blood and clots. The skull was then chipped away with forceps along the line of fracture as far as the parietal eminence, in the hope of finding another bleeding branch of the middle meningeal artery. The bleeding was, however, found to be a general oozing from the whole surface of the dura, which had been dissected up from the bone by the blood-pressure. The dura was slightly lacerated at one point near the parietal eminence. The hemorrhage continued to be serious until the whole space between the dura and bone was tamponed with iodoform gauze and a drainage-tube.

The finger was passed under the brain into the middle fossa, and could dis-

tinctly follow the line of fracture through the petrous portion of the temporal bone. The scalp was replaced and stitched, except at one point left for the removal of the gauze.

During the operation the pulse rose from 40 to over 100. The respiration became less stertorous and the pupils less dilated, but the right was still larger. The patient became somewhat sensitive to pain and moved both arms and legs. During the following day (July 6) he remained in profound coma, with a pulse of good strength and somewhat stertorous respiration. He moved the right arm and leg, but rarely the left, and did not open his eyes. He passed urine and had an occasional involuntary dejection. The tubes were taken out and most of the gauze was removed. His pupils were contracted,—the right being the largest. In the afternoon the temperature rose and the patient perspired freely. He became restless and attempted to remove the dressing, his movements being chiefly on the right side. The reflexes were increased.

On the next day (the 7th) the pulse and temperature fell, the patient became less restless, and could open the left eye. The pupils were equal. He apparently understood questions, and in the afternoon said he was hungry. He took milk and lime-water by the mouth. The wound healed very rapidly. The gauze was all taken out on the 8th, and the stitches on the 9th, leaving only two small, superficial, granulating areas. The patient could by this time understand and answer questions with some intelligence, but was apt to mutter when spoken to. He kept his eyes closed, and was apparently asleep most of the time. The pupils were equal and reacting, there was ptosis of the right lid, and slight facial paralysis.

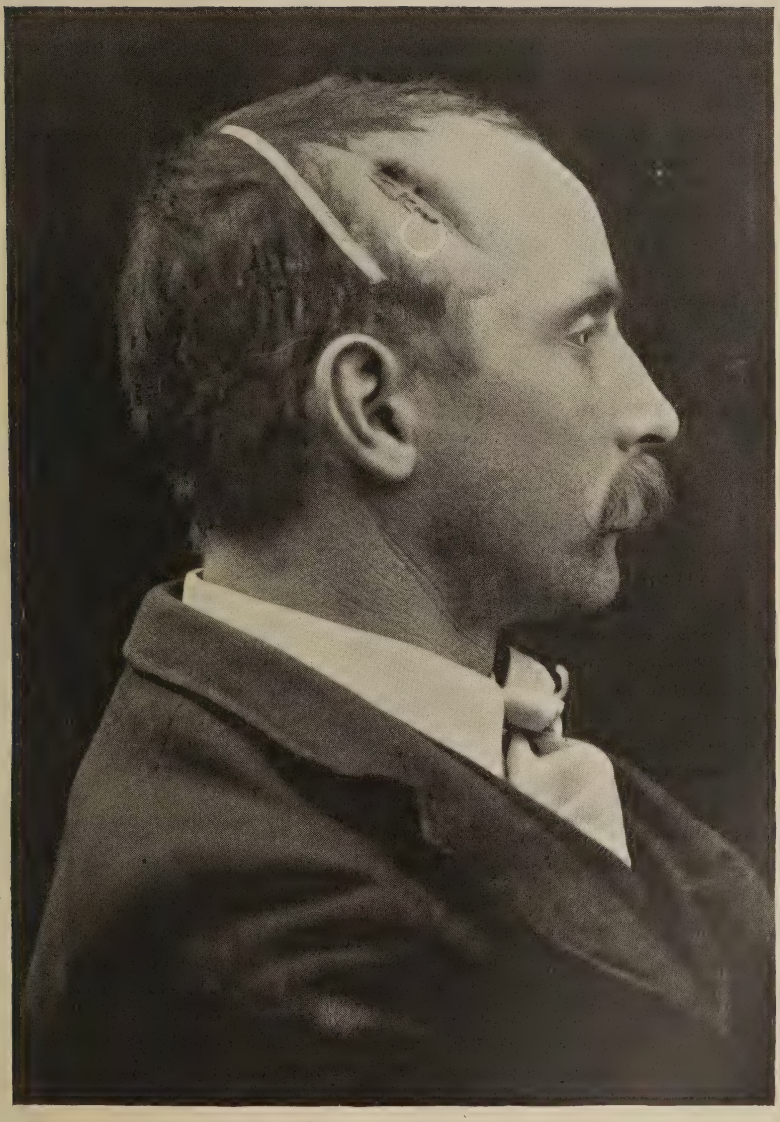
During the three weeks following his mental condition greatly improved, and the memory of his life up to the time of the accident returned. He was sometimes drowsy, at other times noisy and unreasonable, but was conscious and intelligent. There was well-marked facial paralysis on the left side, which gradually improved, and by August 10 had almost entirely disappeared. The patient could by that time walk, and was perfectly rational, although still rather childish.

On November 13 he went to the Convalescents' Home, where he made himself very useful as a dresser, and seemed to be perfectly sound in mind. A letter from his sister on December 13, in answer to our inquiry as to his condition, states that he is in splendid health and is learning the steam-heating business.

CASE II.—SUBARACHNOID HEMORRHAGE IN A COMPOUND DEPRESSED FRACTURE OF THE SKULL.

On November 25 the patient, a man thirty years old, was kicked by a horse, and was unconscious for about ten minutes. He was brought to the Massachusetts General Hospital three hours after the injury. When seen there at 5.30 P.M. he was conscious, but had difficulty in speaking. The tongue turned to the left side when protruded. Pupils equal and reacted quickly. Pulse 96. There was no other paralysis. There was a compound depressed fracture on the right side of the skull, about two and one-half inches above the ear, running up and backward for a distance of two and a quarter inches, the depression being one inch wide and three-quarters of an inch deep.

Under ether, the crushed edge of the scalp-wound being cut away, and the scalp reflected back so as to lay bare the fractured bone, an inch trephine was placed just below the fracture, and the depressed bone was easily removed. The dura appeared white and uninjured, but it bulged into the wound and did not pulsate. Distinct fluctuation showed the presence of fluid under the dura. On opening the dura a quantity of clear fluid escaped, but the pulsating brain was still not visible. Another fluctuating membrane, which had the color of muscular tissue, pushed into the opening of the dura. On incising this membrane, a little clear fluid and about an ounce of



CASE II.—Appearance of patient subsequent to the operation. The area to which the trephine was applied and the relative position of the fracture are well shown.

liquid blood ran out. The pulsating brain-convolution then became visible for the first time. Blood continued to pour out of the subarachnoid space, and was only controlled by packing gauze deep in between the convolutions of the brain. A dry gauze dressing was applied with moderate pressure. The operation was well borne. The bandage was quickly stained with blood, and required constant reinforcing for two days. On the third day the gauze packing was removed, and the bleeding was found to have entirely stopped. A gauze dressing was then placed outside the dura.

The patient was seen by Dr. J. J. Putnam on that day, who made the following report: "There is paresis of movement of the upper lip, especially noticeable in talking. The tongue protrudes to the left, but lies straight in the mouth. There is no loss of sensibility. There is very slight imperfection in the formation of some letters, and difficulty in saying the alphabet rapidly; no paralysis of the legs or arms. Knee-jerks exaggerated, but not different from each other."

On the fifth day the temperature fell to normal and the pulse was 70. The tongue came out straighter, and there was less difficulty in talking. The patient thought his voice had sounded unnatural ever since the accident. December 6, eleven days after the accident, the pulse and temperature were normal; the patient felt bright and well; the tongue came out straighter; he was still unable to say the alphabet rapidly; the wound was closing up. Recovery was complete.

The hemorrhage in this case was undoubtedly over the lower part of the fissure of Rolando.

TRAUMATIC INTRACRANIAL HEMORRHAGE.

This is a very important subject from a surgical point of view, and I am surprised that we hear so little about it. It will, no doubt, be found, like appendicitis, to be of frequent occurrence in communities where it is understood. I happen to have been called to see three cases in the Accident-Room of the Massachusetts General Hospital in the last five months. Two of the cases are here reported in full. The other was a child whose head was so smashed that the bone fragments could be moved past each other. The scalp in the temporo-parietal region was tense with blood, which had found its way through the fracture. The patient was so nearly pulseless that no operation was done. The diagnosis was middle meningeal hemorrhage, with laceration of the brain, and probable rupture of the lateral sinus. The child died in a few hours, and an autopsy showed the diagnosis to be correct.

From the practical surgeon's stand-point we have three sources of intracranial hemorrhage to consider, which are, in the order of their importance,—

1. Middle meningeal hemorrhage,—extradural.
2. Hemorrhage from the pia-mater,—subdural.
3. Hemorrhages from the sinuses.

Hemorrhages into the brain-substance will not be considered here, as this paper is intended to deal only with the more common surgical emergencies.

1. MIDDLE MENINGEAL HEMORRHAGE.

It is of practical importance that the squamous part of the temporal bone, traversed by the posterior branch, and the anterior inferior angle of

the parietal bone, which is grooved or tunnelled by the anterior branch of the middle meningeal artery, are the thinnest parts of the vertex of the skull. This accounts for the fact that a very slight blow has often caused a fatal hemorrhage. The grooves for the artery in the bones cause such weakness as to invite the line of fracture to follow them. Indeed, fracture of the base often extends upward in these grooves, and is accompanied by middle meningeal hemorrhage, as in Dr. Warren's case.[1]

The artery and its branches can in a general way be said to lie behind the parietal and squamous portion of the temporal bone. In this region is also the fissure of Rolando with the motor area, which, of course, accounts for the paralysis in these cases, and makes a more or less accurate localization of the clot possible.

Middle meningeal hemorrhage often occurs without a fracture of the skull, and may even occur on the opposite side from the blow from *contre-coup*. In such cases the blow detaches the dura from the skull, which process tears the artery. Jacobson[2] found that in eight cases out of seventy the hemorrhage occurred without fracture, and that in thirty-eight out of sixty-two cases the base of the skull was involved. He also found that the main trunk of the artery was rarely injured.

According to the same authority, the extravasation will vary according as the injured branch is large or small. It may—

(*a*) Be rapid and quickly fatal.

(*b*) Be delayed for some time.

(*c*) Take place in two stages, the first slight and producing no coma.

The clots are nearly always dark or black, and disk-shaped, thick in the middle, with a definite margin. Old clots are granular and adherent, and difficult to remove.

The amount of violence required to cause the hemorrhage may be slight; for example, a blow from a cricket-ball, or from a poker, or with a spade, or a slight fall of two feet six inches has been sufficient. It is, however, nearly always caused by a severe fall.

Symptoms.—According to Jacobson, the conditions to be considered are:

(*a*) Interval of consciousness or lucidity.

(*b*) Condition of limbs as to hemiplegia, paraplegia, rigidity.

(*c*) Condition of the pupil.

(*d*) Character of the pulse.

(*e*) Unconsciousness increasing and passing into coma.

(*f*) Character of the respiration.

(*g*) State of the scalp.

"It is well known that between the time of the concussion or stunning of the patient by the original violence and the supervening of symptoms of

---

[1] Amer. Journ. Med. Sciences, May, 1890.

[2] Guy's Hospital Reports, vol. xliii.

compression due to the blood which is now effused, there often exists *an interval of more or less marked consciousness*, the value of which has long been recognized." This is not always present, and not always well marked when present. It varies from fifteen minutes to ten days. It is not marked when the concussion is very severe and lasts a long time; for during this time the brain becomes compressed, and thus consciousness may not intervene. During the interval a child has been known to eat its dinner. Patients have had scalp-wounds dressed and walked away from the hospital by themselves. In this way one of the most fatal of head injuries may be overlooked, owing to the slight violence and the delay in the symptoms of compression. Patients have been allowed to sleep, and have become comatose without waking. Frölich mentions the case of a patient who was hit on the head with a cane, and walked for an hour and a half. When he arrived home he vomited and became comatose, and died in five hours. At the autopsy there was no fracture, but a large clot from middle meningeal hemorrhage was found. The interval of consciousness, when present, is considered the most important point in the diagnosis, but Jacobson found it absent in one-third of the cases collected by him.

Hemiplegia, or *paralysis* of the limbs on the opposite side to the injury, is a very common condition in middle meningeal hemorrhage, but is not necessarily present, and when present varies greatly in degree. The absence of all paralysis is, however, according to Jacobson, a rare thing in these cases.

Rigidity of the limbs, combined with convulsive movements, usually indicates contused and lacerated brain-substance.

If the *pupils* are natural in reaction, the compression is not severe. If the pupils are insensitive and dilated, the compression is extreme. If one pupil is widely dilated and the other is natural or contracted, and if the dilated one is on the injured side, it is considered to be a sign of great importance. Mr. Hutchinson explains this by pressure on the trunk of the third nerve. This explanation is open to doubt; certainly in Case I., here reported, the clot could not have pressed on the third nerve, and yet the symptom was present.

The *pulse* will vary according as the brain is compressed, or lacerated and contused. In uncomplicated pressure cases it is usually about forty. In serious cases of brain-laceration or contusion it is rapid and feeble.

The state of *coma* varies with the size of the clot effused. It may come on rapidly or slowly, according to the size of the artery ruptured. Commencing coma may be taken for natural sleep, and the patient may be allowed to lie until it is too late. It has also been taken for drunkenness. If coma comes on late, it is usually sudden and rapidly fatal.

The *respiration* is usually stertorous, is sometimes slow and sometimes rapid, but usually ceases suddenly.

The condition of the *scalp* is important when no history is known. Ecchymoses and puffy or pulpy spots over the parietal or temporal region

would, of course, suggest an injury in that region sufficient to cause middle meningeal hemorrhage. Sometimes hemorrhage may make its way through a crack in the skull, and be felt tense and fluctuating under the scalp. When there is doubt, such pulpy places may be incised to see if the skull is fractured beneath; and even if no fracture is found, the trephine should be used, if other symptoms make the diagnosis of middle meningeal hemorrhage probable.

The treatment should consist in trephining and cutting away as much of the bone as may be necessary to remove the clots and arrest the hemorrhage.

Where shall we trephine? Of course, if a fracture is present, we must trephine in the line of the fracture. But with no outside clew to the seat of the rupture, where shall we trephine?

Wiesmann[1] has suggested that the symptoms will vary according to the location of the hæmatoma, and that we should trephine accordingly. But we cannot always observe the patient from the beginning. He is often brought to the hospital in deep coma or in a condition of drunkenness, and the case may be complicated with brain-laceration. Vogt and Beck have suggested trephining at a point one and one-half inches above the zygoma and one and one-half inches behind the external angular process of the frontal bone. An inch trephine so placed is certain to expose the anterior branch of the middle meningeal artery. But removal of the clots which cause the compression is much more important than finding the artery. Indeed, the bleeding itself—*i.e.*, the amount of blood lost—is rarely important, and is usually easily controlled by pressure,—in fact, it has often entirely stopped before the surgeon sees the patient.

Krönlein[2] makes the suggestion of trephining twice, if necessary, in the positions where the chances of finding the clots are good. He says that a large hæmatoma may fill the whole side of the vault as far back as the tentorium, but usually the hæmatomæ are less extensive, and may be divided in a general way into three classes,—

1. Fronto-temporal,
2. Temporo-parietal,
3. Parieto-occipital,—

according to their situation. (See figure.) He suggests trephining first at the point suggested by Beck, because that position would expose either a fronto-temporal or a temporo-parietal hæmatoma; if no hæmatoma is found there, and the indications still point to middle meningeal hemorrhage, to trephine again on the same horizontal line just below the parietal eminence, because an opening in this position would expose either a temporo-parietal or a parieto-occipital hæmatoma.

---

[1] Deutsche Zeitschrift für Chirurgie, Bd. xxi.

[2] Deut. Zeit. für Chirurgie, Bd. xxiiii.

Having found the hæmatoma, it should be removed with the finger, or washed out, and the bleeding stopped.

II. SUBDURAL HEMORRHAGE.

Dr. S. W. Gross, quoted by Jacobson, says, "Extravasation into the arachnoid sac coexists with nearly all of the severe contusions of the cortex of the brain, when it is due to laceration of the vessels of the pia mater with simultaneous rent of the visceral arachnoid. It is also occasioned by rupture of the cerebral veins, or of the great sinuses, or it may depend upon a wound of the dura mater. . . . The symptoms of this accident vary in intensity. In some cases there is no evidence whatever of cerebral disturbance; and even when the effusion is very considerable, provided that it be diffused or spread over both hemispheres, the phenomena are vague and masked by those of laceration and contusion. When, on the other hand, the fluid is more circumscribed, or the compression is limited to one hemisphere, the symptoms are decided, but they are identical with those produced by effusion between the bone and the dura mater from injury of the middle meningeal artery."

According to Hutchinson, the bleeding in these cases usually takes place not from one large vessel, but from many small ones, and hence it is poured out with much less compressive force, and ceases much short of the results which a rupture of the middle meningeal artery can produce. A subdural clot will usually, to a greater or lesser extent, bruise and even tear the brain surface. Spasm due to irritation of the motor cortex may be present. Paralytic symptoms may be definite and pronounced, if the lesion is in the motor area, as in Case II., here reported.

Commonly the symptoms are identical with those of middle meningeal hemorrhage,—viz., more or less marked coma, dilated pupils, slow, full, and labored pulse, hemiplegia, or diminution of temperature of the opposite limbs, and slow, noisy, or stertorous respiration. In the majority of cases there is also the interval of consciousness, but absolute insensibility may exist from the first.

III. HEMORRHAGE FROM THE SINUSES.

This may be extra-dural or subdural, according to the location of the rent in the sinus.

It is popularly supposed that hemorrhage from the sinuses must necessarily be fatal. This is by no means true. I have myself on two occasions been able to control hemorrhage from a sinus by pressure with antiseptic gauze. In one case the hemorrhage was external,—that is, was pouring outward through the fracture; in the other, the hemorrhage was from the lateral sinus and intra-cranial, causing brain-compression. I was able in this case, by removing a loose fragment of bone, to allow the escape of the intracranial extravasation and to plug the sinus. Both of these cases died several days later of extensive brain-injury, but not of hemorrhage. This

plugging of sinuses is no uncommon procedure. The rent in a sinus may also be closed with a fine needle and suture. Indeed, Bergmann entirely removed a part of the superior longitudinal sinus in one of his cases. The researches of Schellmann have shown that the integrity of one sinus at least may be destroyed without any serious effect upon the brain itself.

With our accumulated experience with extra- and subdural hemorrhage I see no reason why brain-compression following laceration of one of the large sinuses should not be successfully diagnosed and treated by trephining, even where there is no external evidence of fracture of the skull.

SOME NOTES ON SCARLET FEVER, BASED ON ONE HUNDRED AND EIGHTEEN CONSECUTIVE CASES.

BY HENRY W. CATTELL, A.M., M.D.,

Demonstrator of Gross Morbid Anatomy in the University of Pennsylvania; Prosector to the American Anthropometric Society; Pathologist to the Presbyterian Hospital, etc., Philadelphia.

THE following notes were taken from my case-book as illustrative of certain questions that arise regarding scarlet fever. I have purposely arranged them in this informal manner so as to accentuate the one or more points that each case demonstrates.

CASE I.—C. H. visited St. Clement's Dispensary to have a health-certificate signed, so that she might be sent to the country for a week's vacation. On looking at the hands marked desquamation of the palmar surface was seen, and it was naturally thought that she had had a recent attack of scarlet fever. On careful questioning no history of sickness could be elicited, but I learned that an older girl at her school had been in the habit of running pins beneath the skin of her hand,—a common habit among some school-children. This had been some two or three weeks before the close of school, and had left a desquamating surface which it was impossible to distinguish from that following scarlatina.

CASE II.—A little girl in a tenement-house was taken sick with chicken-pox, and on the fourth day developed an attack of scarlet fever. She was isolated for both diseases as much as practicable. Later on three other children in the same house developed chicken-pox, while none developed scarlatina, though they had not yet had the disease.[1] This and similar cases show that chicken-pox is much more contagious than scarlet fever.

CASE III.—In scarlet fever of a most marked character there is no necessity of the temperature at any time going above 99° F. By marked character is meant that most of the other classical symptoms of the disease are present. In my own case, though the eruption was extremely marked, followed by desquamation of nearly the entire surface of the skin, the temperature at no time rose above 99.2° F.

CASE IV.—I have seen one case where a child went to bed apparently perfectly well, became sick at her stomach in the early morning, convulsions set in at 8 A.M.,

---

[1] This case was also seen on several occasions by Dr. J. P. Crozer Griffith.

which lasted almost continuously for twelve hours, without any return to consciousness, and death ensued. The diagnosis was made plainer by the fact that a twin sister developed a marked case of scarlet fever on the following day. I have never determined whether the rash which occurred was that of scarlet fever or appeared from the use of the mustard bath.

How misleading statistics often are! I have seen eighty-eight[1] consecutive cases of scarlet fever get well. Supposing, however, we include the death which preceded and the one which followed this number, and we have a mortality of 2.22 per cent. Our hospitals receive the severer and less hopeful cases, and their mortality is too high. The health officer is more apt to obtain the correct number of deaths *directly* due to scarlet fever, but never the entire number of cases which occur, for all cases are not seen, and few even of the most methodical physicians report all their cases, and these results are too high. My figures of five deaths in one hundred and eighteen cases, giving 4.23 per cent. mortality for all the cases, whether seen alone or in consultation, may be suddenly raised to ten per cent. or over by the disease taking on a severer form than that which it has manifested in those cases which I have seen.

Case V.—Of the three cases of scarlet fever upon which I have made post-mortems, the most interesting case was the last, in which the death occurred on the eighteenth day. There were found numerous dendritic growths in the middle third of the œsophagus. They were evidently of bacteriological character, and occupied one-third of the lumen of the œsophagus, and must have rendered the taking of food extremely difficult. The lymphatics in this case were markedly enlarged, numerous, and hemorrhagic. The lungs were filled with hemorrhagic infarcts and areas of catarrhal pneumonia.

Unfortunately, I had no tubes with me in order that cultures might have been made from the growth in the œsophagus. The illustration shows the macroscopic appearance of the specimen, which was placed immediately after removal in a saturated solution of bichloride, and the photograph therefore shows a slightly-contracted appearance to that which it presented at the post-mortem. A piece of the growth teased in water and stained showed at least eight different morphological varieties of micro-organisms; one resembling the Klebs-Löffler bacillus was present in small numbers. No streptococci were observed.

My thanks are due to Dr. W. M. Welch for the privilege of performing this autopsy, and to Dr. Bemis for his assistance while conducting the post-mortem.

I have frequently used a mixture, recommended for diphtheria, of carbolic acid, oil of eucalyptus, and turpentine. Several tablespoonfuls of this are put in a quart of boiling water and allowed to simmer in an *iron pot*

[1] Of this number, forty-six cases occurred at the Church Home at Angora, in the service of my colleague, Dr. William R. Lincoln, and myself. There were also eighteen cases of diphtheria which attacked the convalescent children, without a single death.

throughout the entire illness. The odor is not objectionable after the first day. Do not use a tin vessel or apply too much heat. I recall a case where a small tin can without a handle was being used over a spirit lamp, and the turpentine took fire from the excessive heat. The lamp was near the bed of the patient. On essaying to remove the table, the vessel was upset, and the whole floor was a mass of flames. The nurse extinguished the fire, however, by throwing a pailful of water upon the floor, and as all the curtains, carpets, etc., had been removed, no damage was done, beyond the fright sustained by the patient.

The literature of scarlet fever is enormous. I merely cite three papers which have been of special interest to me. Think of having over one thousand cases of scarlet fever in one year! F. F. Caiger[1] must have derived great benefit from the careful watching of so many cases. Is it not possible that some animal may be found in which scarlatina may be developed? J. A. Thompson[2] says that he has seen a cow suffering from a well-marked attack. If this is so, it would certainly aid us very much in determining the vexed question whether the bacillus of scarlet fever has been discovered or not. I hope in the near future to make these experiments myself, unless I hear of some one else who is doing it. The subject of immunity and the obtaining of an anti-vaccine from such animals as are possessed of immunity is receiving a good deal of attention at the present time. A. S. Ashmead[3] has inoculated a Japanese with scarlet fever, in order that he might obtain such an anti-vaccine. Japanese were chosen because they are supposed, as a race, to possess immunity from the disease; but such is not necessarily the case, as is shown by reference to the article in question.

A CASE OF POISONING BY OIL OF BITTER ALMONDS.

BY A. R. ALLEN, M.D.,
Carlisle, Pennsylvania.

WHILE passing the house of a patient recently, the door was suddenly opened and I was hurried in to see her husband. At the foot of the stairs I was informed that he had taken opium.

I found the man in bed, breathing rapidly, pulse 120, weak and

---

[1] An Analysis of One Thousand and Eight Cases of Scarlet Fever admitted into the Southwestern Fever Hospital during 1890. Lancet, 1891, vol. i. pp. 1249 and 1304.

[2] Scarlatina in the Cow. London Practitioner, 1891, vol. xlvi. p. 102.

[3] Inoculation of a Japanese with Scarlet-Fever Germs: an attempt to obtain a Modified Lymph to prevent Scarlet Fever in the Caucasian. Medical Record 1891, vol. xl. p. 270.

thready; heart-action rapid, irregular, and labored; eyes glassy, pupils widely dilated, and an intense general cyanosis. During this brief examination there was a convulsion lasting perhaps a minute, during which the jaws were working and there was a slight foaming at the mouth. There was an odor of prussic acid in the room and it could be detected on his breath. I gave him a hypodermic of apomorphine (gr. one-sixteenth), and followed this with another hypodermic of ether (half-drachm) every ten minutes; after the apomorphine had induced vomiting, which threw off the odor of prussic acid, I gave two teaspoonfuls of brandy, alternating with one drachm of ether every ten minutes. In the mean while I had sent for another physician. On his arrival I proposed that, to relieve the labored and weak action of the heart, and also the venous congestion, we should bleed him, to which the doctor consented. We took about a quart and two ounces of blood, which was intensely dark and thick—having very much the appearance of tar—and giving off a faint odor of the acid.

The bleeding relieved the heart very much, so that it became regular and lost the labored action which had characterized it previously. Free perspiration was induced, and in a few minutes he dropped off into a quiet sleep. During this period, and succeeding the convulsion, there was present at times a tonic spasm of the lower jaw, alternating occasionally with a clonic spasm at intervals of five to ten minutes.

The ether and brandy were continued during the day, and a two-grain pill of digitalis every three hours. The cyanosis (slight) continued for twenty-four hours. On the third day the patient was entirely over the effects of the drug, and said he felt better than he had for three months previous.

I was informed later that an ounce bottle containing half an ounce of the oil of bitter almonds had been found in a shoe-box where he had hidden it. On the day I happened to pass by, the family heard a fall, ran up-stairs, and found him lying on the floor in a convulsion and breathing heavily, and had just put him in bed as I arrived.

After his recovery, he told me he had taken half the contents of the bottle and had just hidden the remainder when the convulsion came on, and he also said that the next attempt he made would be successful, which has since proved true, as only a few weeks ago he took six grains of morphine, from which he died. His recovery from the oil of bitter almonds was, to a great extent, due to the prompt use of apomorphine, which produced full emesis, and to the free bloodletting, which relieved the intense venous congestion, and by so doing relieved the already weakened heart, which was laboring under a double load,—the general venous congestion, including the lungs, and the depressing action of the drug itself.

NOTES ON ECZEMA—WITH SPECIAL REFERENCE TO TREATMENT.

BY CUTHBERT R. BARHAM, M.D.,

Pittsburg,

Member of County Medical Society of New York; Fellow of Pittsburg Academy of Medicine.

Owing to the various forms in which this eruption appears, a short and comprehensive definition is rare. The following, taken from Liveing's "Diagnosis of Skin Diseases," is, I think, the best given among the various authorities:

"Eczema may be briefly defined as a simple inflammation of the skin, which, in its typical form, is characterized by the production of more or less aggregated papules and vesicles, which quickly burst and leave an excoriated surface discharging a gummy, serous fluid, that stiffens as it dries. The eruption subsequently assumes the form of dry, red patches, covered with thin scales."

To this elegant description of the appearance of the lesions may be added the clinical features,—first, that the disease is always attended with itching, often excessive; and, second, that the course is, as a rule, chronic in point of duration. The pathology of the inflammation may be dismissed with the observation that it is catarrhal in character, and, when of long duration, is attended with more or less infiltration of the tissues. The most remarkable feature in the eruption is the variety of appearances presented. No other disease of the skin, with the exception of syphilis, is capable of assuming so many different forms and phases, which vary with the attendant circumstances or progress of the disease.

These various stages of the eruption were formerly considered as distinct varieties of the eruption, and hence received distinct and appropriate names.

The most important of these divisions are the following:

1. Eczema erythematosum.
2. Eczema papulosum.
3. Eczema vesiculosum.
4. Eczema madidans, or rubrum.
5. Eczema squamosum.
6. Eczema pustulosum.
7. Eczema parasiticum, or circumscriptum.

Although it is now well understood that these divisions, for the most part, represent only different stages of the eruption, yet the names are retained as a convenient mode of expressing briefly the stage of the eruption when speaking or writing of it.

In the sixth and seventh varieties there is reason for the application of the term, since these forms are due to an added cause in the former, and to a distinct primary cause in the latter, and the course of the eruption and appearances presented also vary somewhat from eczema as ordinarily encountered.

1. Eczema erythematosum occurs most frequently and is seen in its most typical form on the face. In this case there is presented an erythematous surface, patchy or diffuse, sometimes mistaken for erysipelas. The patch is composed of numberless minute papules closely aggregated, which gives a sensation of roughness when the finger is passed lightly over the surface. In the later stages the color is dull-red, and the surface is rough from slight scaling. At no time is there any discharge during this stage.

The disease may progress no further, but get well with or without treatment, or it may recur again and again as erythematous eczema.

On the other hand, inflammation may progress, and we have the formation of larger papules, visible to the eye. This constitutes,—

2. Eczema papulosum, the second stage in the eruption. The papules in this variety affect mainly the hair follicles, and for this reason it was formerly thought to be a variety of lichen. The papules may be either discrete, irregularly scattered over the surface, or grouped, and in some cases confluent. Each papule is about the size of a pin's-head, acuminate, of a bright- or dull-red color, and may remain as papules during the whole course of the disease, though often a small vesicle may be discovered on the point of the papule by the aid of a lens.

These papules may form vesicles, and then we have,—

3. Eczema vesiculosum, characterized by numerous vesicles, mingled with papules, scattered over the surface, or grouped, containing a clear fluid, which, when the vesicles are ruptured and the fluid poured out, dries and stiffens linen. The vesicles rupture very easily. When the vesicles are closely set they expose, on rupturing, a raw, exuding surface.

This is the stage known as,—

4. Eczema madidans, or rubrum. This stage presents a bright- or dusky-red surface entirely denuded of epithelium, which exudes profusely, discharging a clear or yellowish, glairy fluid, which dries into large, yellowish or brown crusts.

On the other hand, after the rupture of the vesicles, the discharge may quickly cease and the skin become dry and scaly from the exfoliation of imperfectly-developed epithelium, and we have the stage known as,—

5. Eczema squamosum. As eczema rubrum is the result of increased, so eczema squamosum is an indication of decreased, intensity of the inflammation. Eczema squamosum occurs as ill-defined, irregular patches, representing dull-redness, with considerable infiltration and thickness of the skin; over the surface of the patch are a number of coarse or fine dry scales, easily detachable.

The above is the course of a typical eczema, which is so accommodating

as to go through the various stages in regular order. Such cases are rare. The disease may stop short at any of the stages before eczema rubrum, and the erythematous stage is frequently absent. We will now consider the two forms in which the distinction from the foregoing is founded on essential differences in the etiology and character of the eruption.

6. In this variety of eczema we have the eczematous inflammation, with an added infection by the staphylococcus pyogenes aureus or alba. From this results the formation of pus in such of the vesicles as are infected, and we have scattered pustules; or the infection may occur on a denuded surface, and the exuding surface discharges a pruriform fluid. The last variation has received the name of eczema impetiginosum, but the distinction is unwarranted, since it is only one of degree as to extent of surface involved.

7. Eczema circumscriptum, marginatum, or parasiticum, while they will be discussed under one head, really may, with justice, be divided into two classes. The first class contains the various eruptions induced on the body by the action of the tricophytina tonsurans, or germ of ringworm. The second includes those eczematous patches on the hands and other exposed surfaces, due to the action of many germs, and characterized by a sharply-defined patch, dull-red in color, advancing by undermining the epithelium and not clearing up in the centre. The term eczema is applied to ringworm only when it becomes irritated and assumes an eczematous character. This occurs especially around the genitals and anus on account of the perspiration and friction.

The edges of the patch always present a raised edge, composed of papules, and there is a tendency, more or less pronounced, to heal in the centre. The parasitic eczema proper occurs on the hands principally, and presents a surface dull-red in color, slightly scaling or weeping, of irregular outline, advancing by undermining the epithelium, and having no tendency to heal in the centre.

In a single case of eczema many of the varieties may be presented.

The terms "acute" and "chronic" refer properly to the intensity of the inflammation, regardless of the duration, and in this sense they are used by the best authorities. In infants the eruption has a tendency to a pustular character, and is also more easily excited by reflex or local irritation. In fact, the great majority of cases seen under five years of age are reflex in character, and in a number of cases have begun before six months of age. These cases may be classed as neurotic eczemas, and are due, in the main, to reflex irritation from improper feeding. There are certain regions for which a decided preference is shown; they are the forehead, cheeks, vertex, and extensor surfaces of the legs and forearms.

To enter into a thorough discussion of the various causes of eczema would require a discussion of almost the whole subject of etiology. It is necessary, however, to give a short outline of the most important points, in order that the treatment may be properly considered. The etiology may be considered under the following heads:

1. Heredity.
2. General causes.
3. Local causes.

Although the third head is the most important, the subjects will be taken up in the order given above, since it is more convenient to discuss the indications for treatment in this order.

1. *Heredity.*—The claims of heredity are defended and denied by eminent men on both sides, and, since it has no bearing on the treatment, will not be discussed.

2. *General Causes.*—Notwithstanding the fact that much has been written on this subject, and many arguments advanced to sustain the theory of an internal cause in eczema, yet for the most part these theories are unproven, and are founded on very uncertain premises. Among the French authorities great stress is laid on the so-called dartrous diathesis, to which they refer eczema and many other cutaneous diseases. Others hold that the inflammation depends upon a peculiar construction of the skin, and teach that an eczematous skin is dry and irritable. They point to the frequency of eczema in ichthyotic subjects as proof of their theory.

Some points in the clinical history are well recognized. The patient affected with eczema is seldom in good health, as in psoriasis, for instance; often there is nervous exhaustion, or general depression of the whole system. Perhaps the most important place should be assigned to derangements of the alimentary canal and of the reproductive organs in women.

Indigestion, in one of its forms, is seldom absent, and frequently we find chronic constipation. The close connection existing between the skin and alimentary canal leads me to give prominence to this factor.

Improper action of the kidneys, leading to retention of irritating impurities in the blood, is also a frequent cause. As mentioned above, improper feeding of starchy foods, candies, and other indigestibles, to young children is often followed by eczema. Auto-intoxication is doubtless a factor.

3. *Local Causes.*—Under this head may be included all substances or conditions producing irritation of the skin. The stronger irritants are always capable of producing inflammation whenever the skin is exposed to their influence for any length of time. The weaker irritants require a predisposition on the part of the patient—permanent from some peculiarity of the skin, as especial tenderness, or temporary from want of vigor, due to various causes—to render them operative; some irritants being ineffective when the patient's vital tone is normal, and hence the resisting power of the skin greatest.

Irritants may be divided into chemical, thermal, or mechanical. Chemical irritants include many preparations which are used medicinally, such as sulphur, mercury, soaps containing excess of alkali, etc.

Thermal effects, produced by the sun or artificial heat, operate upon stokers, blacksmiths, and cooks.

Cold is irritating to an eczematous surface, and when combined with dampness may set up the inflammation, when the parts are allowed to dry spontaneously. It is often seen to operate in the cases of bartenders, washwomen, servants, etc.

Mechanical irritants comprise dry powders, such as brick-dusts, coal-dust, and the various groceries like sugar, flour, salt, etc., scratching in pruritic eruptions, scabies, etc., and friction of articles of clothing, pressure, and many others.

Many eczemas from these mechanical irritants might be called *trade eczemas*, and they are limited to the parts exposed to the irritants, as a rule; though, taking this as the starting-point, it may spread, and even persist after removal of the cause.

Indications for treatment are based on:

1. Internal or functional irregularities.
2. Local condition, or stage of eruption.
3. On cause, when known, as in parasitic eczema.

Treatment in many cases is external alone, while in those in which some functional irregularities can be detected it must be combined with internal treatment.

The first thing to investigate is the cause of the eczema,—*i.e.*, whether local or internal. When there is an indication of internal cause, it should be thoroughly investigated and remedied. Investigate the general health, habits, and surroundings of the patients, and endeavor to remove any injurious influences. Our aim should be to guard against any depressing or irritating influences, whether internal or external. Should we succeed in doing this, we will find the treatment of the local inflammation comparatively simple.

The hygiene of eczema may be said to include bathing, clothing, exercise, etc.

In regard to bathing, I know of no better advice than that of "Punch," in regard to marriage,—"Don't." Plain water is as poison to an eczematous surface. It increases the irritation in the acutely inflamed, and macerates and removes the young and recently-formed epithelium in the healthier patches. If the patient *must* wash, let him use water containing starch and a small quantity of bicarbonate of soda. Even this is injurious in the more acutely inflamed areas. It is a fact not generally known that by the use of sweet-oil and a piece of soft flannel the skin can be thoroughly cleansed. The clothes should be soft and pressure avoided. No flannel should be worn next to the skin.

Exercise should be taken in the open air when the air is not so cold as to be irritating. An exception must be made in those cases where the eczema affects the legs and is complicated with varicose veins, in which case the patient should walk as little as possible, for increasing the vascularity of the part will increase the inflammation.

Diet.—The patient should avoid all indigestible foods, as sweets, pas-

tries, salt, meats, starchy foods, etc. No alcohol should be taken in any form, since it increases the hyperæmia of the skin.

Functional irregularities must be regulated.

1. *Dyspepsia.*—This is a condition that often gives rise to much reflex disturbance, and yet I hardly know what to advise in regard to its management. It is at best a difficult disorder to treat, and a cure is almost impossible. The only thing to do, then, is to alleviate the symptoms as much as possible by diet,—which has been discussed above,—and by appropriate medication.

2. *Constipation.*—Of all the derangements of the internal organism related to eczema, this is the most common, and productive of the most injurious results. Unlike dyspepsia, it can be treated rationally. A pill of aloes, strychnine, and nux vomica is one of the best combinations for administration in chronic cases, or we may use instead fluid extract of cascara. It is well to use Hunyadi Janos water two or three times a week in connection with either of the above. In infants and children, small doses of castor-oil or cascara, two to five minims; tincture of belladonna, three minims, in syrup. When the motions are offensive and slimy, hydrarg. cum creta, in doses of one grain, may be given with advantage two or three times a week.

3. *Abnormal or even insufficient renal action* must be remedied; for by stimulating the kidneys we fulfil one of the most important indications in the treatment of any inflammation,—*i.e.*, we give rest to the inflamed organ. For this reason it is well to prescribe in all acute cases a diuretic. Dr. Bulkley, of New York, favors the administration of acetate of potassium for this purpose, while Dr. Geo. T. Elliot rejects the acetate as liable to produce derangements of the stomach, and selects the citrate in its place. Fluid extract of pansy is also much used by the latter; it is an efficient and unirritating diuretic, and in those cases in which I have seen it tried, acted better than either of the salts of potassium.

4. *Reflex irritation* should always be sought for, and will, in many cases, be found not to be dependent on the alimentary canal. These are cases in which no particular departure from health can be detected, and yet the eczema persists, or recurs in a short time after a cure is affected.

These cases are seen most frequently in children, and often the point of reflex irritation is difficult to locate. An adherent foreskin or pinhole opening of the prepuce is often found in these cases.[1] The remedy is circumcision, or, better, forcible stripping back of the prepuce and oiling the internal surface. The forcible stripping should be repeated every day by the mother, and oil applied each time for about two weeks, when the condition will be found to have disappeared. This simple measure will often cause disappearance of the eruption without further treatment.

---

[1] Dr. Isadore Dyer, New York Medical Record, January 23, 1893.

5. *Improvement of general nutrition is essential.* It should be accomplished by the judicious indulgence in exercise, regular habits, and tonics. In regard to tonics, iron should never be administered during the acute stage. Arsenic is valueless for its direct effect on the skin, though as an alterative and tonic it is sometimes valuable in the later stages. It is irritating to the stomach, and hence always dangerous in the acute stages. Of the other tonics, nux vomica, gentian, tincture of cinchona, and cod-liver oil are of value.

When the condition known as neurasthenia is present, perfect rest should be given, and nerve-tonics administered, as phosphorus and strychnine.

Ergot is useful, when given internally, in reducing the congestion, and consequently the irritability of the skin.

The local treatment, while more important than the general, should not be used to the exclusion of the other, but the two should be judiciously combined on the lines laid down under the discussion of the internal treatment.

The local treatment is divided into—

1. Soothing.
2. Astringent.
3. Stimulating.
4. Parasitic and antiseptic.
5. Mechanical.

Except where the inflammation has been excited by parasites, the local treatment is independent of the cause. The points considered are the character and intensity of the inflammation, the location, and the secondary changes which have ensued.

The first two divisions are so intermingled that it is difficult to make a sharp division. They are both applicable when the inflammation is acute, and have very little effect on the more chronic types where induration is present. Among the various soothing remedies not astringent in character may be mentioned olive- or almond-oil, simple ointment, and aqua rosa ointment. To this may be added a lotion of bismuth subnitrate and magnesia carbonate, each one drachm to four ounces of water, which is very mildly astringent. The astringent ointments proper of value are preparations of salicylic acid, oxide of zinc, boracic acid, tannic acid, and calamine.

The stimulating remedies are the various mercurial preparations, the various forms of tar,—oleum rusci, oleum cadini, and picis liquida.

Ichthyol is a comparatively new drug, prepared by distillation of bituminous shale, and treating the distillation with strong sulphuric acid. It is recommended by Unna of Hamburg, and is used quite freely in this country. Its properties are those of parasitic and reducing agents; it mixes with water and ointment in any proportion.

The parasitic remedies are preparations of sulphur, resorcin, bichloride of mercury, and ichthyol.

Mechanical appliances refer to bandages for varicose veins when these complicate eczema.

It will not be amiss to close with a few observations on the indications for each class of remedies and the method of application.

Whether soothing, astringent, or stimulating remedies are to be chosen depends upon the intensity rather than the duration of the inflammation.

Where there is great hyperæmia and irritation, soothing remedies are indicated; these may be simple ointments or mild astringents, containing bismuth and oxide of zinc. Boric acid, too, is valuable in combination with either of the above. Apply thickly on lint. When the discharge is profuse, and vesicles form rapidly, a hygroscopic lotion or ointment is necessary. For this purpose a lotion of carbonate of magnesia and oxide of zinc, each one drachm to four ounces of water, is the best. It should be applied several times a day, and the resulting crusts, formed of powder and discharge, must not be forcibly removed. The condition will generally improve in two or three days, and when the discharge stops or becomes very slight a soothing ointment should be applied, and later on mildly astringent or stimulating ointment. Dr. Bulkley recommends—

℞ Tannic acid, ʒi;
Carbolic acid, gr. x;
Vaseline, enough to make one ounce,

as especially useful for papular and erythematous eczema.

Dr. Geo. H. Fox uses in dispensary practice, for papular eczema and weeping eczema in which the infiltration is slightly marked, the following:

℞ Salicylic acid, 5 parts;
Subnitrate of bismuth, 25 parts;
Starch, 25 parts;
Vaseline (by weight), 65 parts.

These are both good formulæ; a third may be added:

℞ Salicylic acid, gr. xx;
Boric acid, gr. xxx;
Oxide of zinc ointment, ℥iv.

In those cases where the weeping is slight and thickening marked, an ointment or lotion, containing from ten to thirty per cent. of ichthyol, is of great benefit. The ichthyol tends to harden the newly-formed epithelium, and thus to protect the surface.

The ichthyol is again useful where a parasiticide is needed which is mild and unirritating in character.

Of the stimulating ointments, the preparations of tar hold the foremost rank, and may be used in various strengths, from five per cent. up to the pure oil of rusci or oil of cade. They should be used only in case of infiltration, and always applied on a small surface first, to test the effect on the

skin. When it becomes necessary to use the plain tar (cade or rusci), it is best to use it energetically, and rub into the spots effectually with a piece of cloth or brush. The other remedies mentioned under the head of stimulating remedies are not used to any great extent.

The various parasiticides have been already mentioned, and ichthyol has been touched upon. Of the others, resorcin and sulphur are the most valuable. Resorcin may be used as strong as twenty per cent. Sulphur is used up to ten per cent. Parasitic ointments should be kept continually applied.

In case of varicose veins, a *cloth* bandage should be firmly applied every morning, and removed at night, and the patient forbidden to walk more than is absolutely necessary.

In any case of eczema where large crusts are formed, the removal of these is essential in order that the remedy may reach the skin. This may be done with ease by placing on the surface overnight a piece of flannel soaked in sweet-oil. The crusts are found next day to be less adherent, and may easily be removed by gentle washing of the surface with oil.

A CASE OF CONGENITAL DEFICIENCY OF THE LOWER EXTREMITIES.[1]

BY GEORGE ERETY SHOEMAKER, M.D.,

Visiting Surgeon to the Methodist Hospital, Philadelphia.

THE child before us was born and now lives in Maine. She was recently sent to this city and admitted to the writer's wards at the Methodist Hospital for the purpose of securing mechanical support. She is shown here simply as a congenital deformity, though it may be said that since coming here, a few weeks since, she has learned to walk readily by the aid of crutches,—first upon rigid rods, forked at the top and attached to the body by a plaster-of-Paris cup enveloping the pelvis. The weight of the body rested entirely upon the tuberosities of the ischia, as in the normal sitting posture. The apparatus shown in the cut is simply an elaboration of the same idea: a pelvic cup, with two rigid metallic limbs fastened together and jointed at the sides of the pelvis. The joint has a simple catch, or lock, which can be loosened by the hand when the girl wishes to sit down. The pelvic part is of rawhide, moulded over a cast of the patient and finished in the same manner as the spinal jackets made by Mr. Gemrig, of this city. The sole of the shoe is rigidly attached to a thin steel plate which answers for a foot. The stockings are lightly padded with wool. The child goes about with the apparatus with great facility and entire comfort. Owing to the activity and tender age of the child, it is not considered advisable to

[1] Read before the College of Physicians of Philadelphia, November 2, 1892.

complicate the apparatus by any knee-joints, though were she an adult a fairly useful joint might be devised for that situation.

The child is nine years of age, and is one of seven living children, none of the others presenting deformities. The parents are living and normal.

From the stand-point of teratology the case is of much interest. The deformity of the lower limbs alone is said by Geoffroy-Saint-Hilaire to be more rare than that of the upper, and also more rare than a deficiency in all four. In Ahlfeld's work on deformities I was unable to find a case of precisely the same type. The recent work of Dr. Hirst and Dr. Piersol does not do more than refer to a classification in the folios so far issued. However, M. Breschet (*Bulletin de la Faculté de Médecine*, t. iv. p. 328) describes deformities in an adult male curiously similar to the present case. The man was at that time—early in the present century—a great travelling curiosity. In his case and in this the rudiments are very unlike on the two sides, but, curiously enough, the conditions present are exactly reversed as far as the sides are concerned.

One may recall the general division of members which is observed in man and many higher vertebrates into four segments: first, the one nearest the body, for the attachment of the member to the trunk, illustrated in man by the shoulder-girdle or half the pelvis; second and third, the intermediate segments, as the arm and forearm, or the thigh and leg; finally, the end segment, represented by the hand or foot.

In the case before us the first or pelvic segment remains apparently normal in bony development, with no evidence of abnormal origin of muscles. For instance, the glutei are well developed, as are apparently the psoas and iliacus and the upper ends of muscles arising from the front of the ilium which would flex the thigh.

However, the insertions of these muscles into the rudiments of extremities are obscure, as the bony elements of the rudiments are so small and so abnormal in shape that no certainty attaches to any attempt at identification.

The difficulty is at once understood when it is stated that both rudiments are buried within the contour of the buttock to a considerable degree. No hip-joint is present on either side, and probably no femur, though the structure of the left rudiment is less clear than that of the right.

In the right rudiment the soft parts resemble to some extent a small leg and foot, but the resemblance is entirely superficial. Instead of the normal thirty bones, the limb below the pelvis appears to contain only two. There is no hip-joint and no femur. There is one long bone, probably the tibia, which has a musculo-ligamentary attachment to the pelvis in front of and below the anterior superior spinous process of the ilium where it is buried beneath the integument and tissues of the trunk. This bone is about five inches in length, and extends downward and forward to the very tip of the single toe-like extremity. There is no nail upon this tip, but the skin is hardened by use. The other bone is short and irregular, not over an inch in length, and is felt behind and a little above the lower end of the longer bone. It

is freely movable, gives substance to the cushion used as a heel, and is probably a rudimentary fibula.

The tarsus, metatarsus, and phalanges are completely absent. In other words, the only portion of the limb present on this side is an imperfect lower intermediary segment. There is no true joint present, and the free, voluntary movements in all directions take place through the muscular attachment of the single long bone to the pelvis. The limb may be elongated about two inches by traction downward, the upper end of the long bone sliding along the pelvis. It still has a large degree of strength, and the girl is able to stand unsteadily upon the two rudiments, when the buttocks are raised so as to clear the floor about half an inch.

The left extremity is much weaker and more limited in motion than the right, though it contains more parts. The foot segment is represented by a single well-formed toe, with its metatarsal bone. A toe-nail of ordinary appearance is observed. There is no tarsus. A rudimentary tibia and fibula, about four and three-quarters inches long and very thin and weak, may be traced partly within the buttock. From the upper end of the tibia a stronger mass extends backward towards the acetabulum, but its identity as a femur is uncertain because of its being buried in the buttock. The whole limb is flexed or folded upon itself till, in standing, the finger-like foot lies upon the floor and the fibula and tibia lie almost horizontally upon it, and are in contact with it for a considerable distance. This throws what should be the knee in front of and below the anterior superior process of the ilium, but it is completely covered by the tissues of the anterior part of the buttock or trunk.

The limb cannot be straightened to any considerable degree, and its chief motion is backward, though that is quite limited. There are possibly present some elements of every segment of a normal limb, though no positive evidence of a femur exists.

There are no other deformities in other parts of the body. The large development of the shoulders and upper arms is due to over-use. The elbow-joint extends over about an inch and a half beyond a straight line, as though from its unwonted strain. The triceps on each side is better developed than the biceps, because she uses her arms as legs in walking. The biceps is assisted in maintaining rigid extension by the chocking of the elbow-joint. The triceps is not so assisted and does more work. The genitalia and anus appear normal, though the labia majora are rather small. It is usual for deformed individuals of this kind to be sexually deficient, though the man to whom allusion was made as resembling this case was the father of several children.

This child is strong and active, and has always been well. The height when sitting is twenty-seven inches, which is increased to twenty-nine inches when she "stands" resting on the rudiments and balancing with the hands upon the floor. In this position the weight is borne on the last phalanges of the thumbs and on the metacarpo-phalangeal joints. The chest at the nipple-line measures twenty-three and a half inches after expiration, and

twenty-five and a half inches after inspiration; waist at umbilicus, twenty and a half inches; circumference of hips, twenty-four and a half inches. The general development corresponds to that of the average girl at her age.

She walks at times by using her arms like crutches and swinging the body forward between them. She also walks on the stumps, or, more properly, on the buttocks, swinging first one and then the other forward. She walks readily upon her hands, with the pelvis high in the air, as shown in the photograph. Her intelligence is good, though she has been much repressed, her family being ignorant. She has no education, though that is not for want of capacity.

No perfectly satisfactory explanation can be given for the failure in development. It may simply be said that any theory of intra-uterine amputation or constriction is, to my mind, disproved, at least on the left side, by the persistence of the single well-formed toe and its metatarsal bone, with the complete absence of traces of the other toes. Abnormal distribution of blood-supply would not account for this, and we are thrown back upon trophic influences, probably of central origin, whose nature in the last analysis is unknown.

It may be recalled that there is a classification of monstrosities which depends upon the development of the limbs. Thus, a monster without limbs belongs to the class *Amelus* (*μέλος, a limb*). One with two limbs fused together becomes *Symelus*. The *Phocemelus* has a terminal segment of a limb—for instance, the hand—attached directly to the shoulder-girdle without the intervention of the intermediary segments, as the arm and forearm. This arrangement is normal in some marine animals, hence the name *Phocemelus* (*φώκη, a seal; μέλος, limb*). In the *Hemimelus* two distal segments are wanting. It will readily be seen that the present case belongs to none of these groups, but must be classed as *Ectromelus* (*ἔκτρωσις, abortion*), according to the classification of Geoffroy-Saint-Hilaire and others, there being simply a failure in development. The accompanying illustrations (opposite page 136) are from photographs.

TRANSFORMED INSANITY.[1]

BY JAMES G. KIERNAN, M.D.,

Fellow of the Chicago Academy of Medicine; Lecturer on Forensic Psychiatry, Kent Law School of Chicago.

BALL,[2] the French alienist, commenting on some psychiatrical observations of mine, published over twelve years ago,[3] says,—

---

[1] Read before the Mississippi Valley Medical Association.

[2] Maladies Mentales, 1887, p. 539.

[3] Journal of Nervous and Mental Diseases, 1880.

Kiernan, the American alienist, claims to have observed delusions transmitted from one insane patient to another, which he denominates "*folie transformée*" (transformed insanity). Facts of this kind appear to me very strange, as they are contrary to all my experience. The insane coming under my observation manifest the utmost contempt for the delusions of their fellow-patients. Negative results of mine cannot nullify positive observations of others, hence I shall admit the existence of *folie transformée* as a variety of *folie à deux*. Cases, however, should be carefully scrutinized ere being placed in this category.

Ball, in the 1890 edition of his work, however, reports a case which, in his judgment, should be placed in this category. While admitting that the term "transformed insanity" has decided advantages, I cannot claim the credit of its invention. The conclusions of the article cited by Ball were as follows:

Folie à deux, considered in its wider relations as affecting the insane in insane hospitals, is not exceptionally rare. The same conditions obtain among the insane as the sane. The active agent is usually a paranoiac, the passive recipient being an insane patient whose mind is enfeebled. The case is then more properly a *folie communiquée* than a *folie à deux*. The mental influence often exhibits a tendency to spread beyond the first two.

Nothing here appears to justify the creation of a new term, which, however, for psychiatrical purposes, is an excellent designation for a state in which delusions are interchanged by the insane, and modified thereby.

The psychological basis of *folie à deux* (of which *folie transformée* is a variety) merits more attention than it has received in the English-speaking countries, since it has important forensic and sociological relations. The first systematic contribution to the subject (albeit clinical reports occur in the literature for a century) was that of Baillarger,[1] who discussed it under the title of "Communicated Insanity." An epoch-making discussion of the subject was the monograph of Falret and Lasègue,[2] who, after the citation and analysis of cases, arrive at the following conclusions anent this question:

While, under ordinary conditions, mental contagion does not proceed from an insane person to another, or to a sane individual, this is possible under two great classes of exceptional instances. In one (*folie à deux* proper), one of the patients is an active agent, the other a passive recipient. The active agent creates the delusions and imposes them on the passive recipient, who receives and submits to his influence. In time the delusions, as accepted by the passive recipient, react on the active agent, and are, in a modified condition, accepted and proclaimed by both as true. In the second type delusions arise in two individuals who have been subject to the same influences, and have lived a long time together. Delusions may be communicated from a second to a third, and so on to several individuals, but this rarely happens.

---

[1] Gaz. des Hôp., 1860.

[2] Annales Médico-Psych., t. vii., s. x.

The inconveniences of designating the state described in the last sentence as *folie à deux* were so evident to the pupils of Falret and Lasègue that Morandan de Monteyel[1] made a further analysis of the subject, resulting in the conclusion that—

Folie à deux embraced three distinct types: *folie imposée* (imposed insanity), where a lunatic imposes his insane conceptions upon another person intellectually feebler than himself; *folie simultanée* (simultaneous insanity), in which two hereditarily predisposed persons contract the same psychosis under the same circumstances; *folie communiquée* (communicated insanity), in which a lunatic communicates his delusions and hallucinations to a person hereditarily predisposed to insanity. This only occurs when the passive recipient is hereditarily predisposed, when there is an intimate association between the active agent and passive recipient, and when there is an incessant action on the part of the first to compel the second to accept his delusions.

Dr. R. L. Parsons,[2] of Greenmont, New York, in the second American contribution to the subject, which he discussed under the title of "Reciprocal Insanity" (*folie reciproquée*), outlined as follows certain etiological factors of this state which had been ignored to some degree by Falret and Lasègue and de Monteyel, but which had been independently pointed out by myself in the first extended American discussion of the subject:

Under ordinary circumstances, while the contagion of insanity does not spread from one person to another, the influence of the insane on persons inheriting the similar faults of constitution or a known psychical predisposition should be avoided as dangerous. Conditions favoring contagion are most likely to occur among blood-relations who are intimately associated. Emotional forms of insanity are especially liable to extend from one child to another, and also to a lesser degree among women. When two or more persons thus become insane through similarity of predisposition, sympathy, or intimacy of association, they usually exert an adverse reciprocal influence on each other, both as cause and effect of their insanity. The contagion of insanity, under the influence of sympathy, predisposition, and intimate association, is most likely to occur during the inception and developing period of the disease. This liability ought to be taken into consideration, among other reasons, in determining whether it be advisable to treat insane patients at their homes.

Very similar views were expressed by Hammond[3] and Spitzka[4] about the same time.

Spitzka has reported a case which excellently illustrates a mixture of intellectual enfeeblement, contempt of the insane for each other, and morbid simulation which may underlie these cases.

A puerperal lunatic, isolated because of her violence, tore every shred of clothing from her body, and then, in an incredibly short time, picked the matting of the room to pieces and made from the strands a most complete, tasteful dress, including under-

[1] Annales Médico-Psych., Jan.–Feb., 1881.
[2] Alienist and Neurologist, 1883.
[3] Treatise on Insanity.
[4] Insanity: its Classification, Diagnosis, and Treatment. Edition 1883.

clothing, a bonnet, and a satchel. She wore this for a long time, and abandonment of it was a symptom of convalescence. She loudly asserted that she was an Austrian princess, but gave a name not on the list. She repudiated the attentions of an old, deteriorated lunatic, who saw in the arrival of "her" daughter the act of conspirators who had deprived her, the "legitimate queen" of Austria, of her birthright. Later on the first patient accepted this relation, but evidently in the spirit of children who play store. She clearly despised and pitied her fellow-patient.

Lehmann,[1] after an exhaustive, just, critical *résumé* of the literature and clinical observation, arrived at conclusions practically identical with those of Lasègue and Falret. Similar results were arrived at by Italian alienists, like Funaiolio[2] and Lombroso.[3] Regis[4] pointed out some years ago that, in addition to the communicated type of Baillarger, the simultaneous type occurred. Savage,[5] Woods,[6] Ringrose Atkins,[7] Nolan,[6] Needham,[8] Conolly, Norman[9] have reported mixed instances of the communicated and simultaneous type. The discussion[6] in England anent insanity in twins (the *folie gemellaire*) and *suicide à deux* in France has resulted in many corroborative reports of cases of this mixed type. Dr. Hack Tuke[6] adopts conclusions anent the subject practically endorsing the views of Lasègue, but adding to the division of Monteyel a fourth class, "in which one lunatic affects another with his special delusion," which is practically "transformed insanity." Ball, with a most commendable desire to classify in a convenient shape the various types of *folie à deux*, divides it into *folie imposée, folie communiquée, folie simultanée, epidemic insanity, suicide à deux, folie gemellaire*, and finally *folie transformée*. For clinical purposes this classification has a certain value, albeit pure types of *folie simultanée* and *folie gemellaire* are not psychologically allied to the other varieties. This has led to an error, elsewhere noted in Nolan's criticism of Spitzka. As has been shown by C. K. Mills,[10] *folie à deux* may present all the types (into which De Monteyel has divided it) mixed. There may be in certain predisposed, intimately associated, related cases *folie simultanée, folie imposée*, and *folie communiquée*. It was to this mixed type particularly that Parsons applied the term reciprocal insanity, and the cases cited by Parsons bear a decided resemblance to those reported by Mills.

Seguin[11] cited instances of pure *folie simultanée* in the first American communication on the subject, which was purely clinical in character. The condition is therefore recognized by American, English, French, German, and Italian alienists. What psychological conditions underlie this state? Ball has very logically shown that the egotism of the insane has such in-

---

[1] Archiv fuer Psychiatrie, B. xiv.
[2] Rivista Sperimentale di Fren., 1884.
[3] Archivio di Psichiatria, 1881–85.
[4] Annales Médico-Psych., 1879.
[5] Insanity.
[6] Journal of Mental Science, 1888.
[7] Dublin Journal of Med. Sci., 1888.
[8] Journal of Ment. Sci., vol. xxvii.
[9] Brain, 1888.
[10] Review of Insanity and Nervous Disease, Sept., 1892.
[11] Archives of Medicine, 1879.

tensity as to prevent their reception of ordinary ideas. This is true, however, only when the ideas in question antagonize the egotism. The reverse is the case when the egotism is supported. The following seeming "plot among the insane," which I reported some years ago,[1] excellently illustrates both Ball's position and the feature just outlined. The *dramatis personæ* of the "plot" were,—

A twenty-nine-year-old Irish-American had attacks of incoherent hallucinatory confusion subsequent to a sunstroke. He became recurrently insane thereafter. Alcoholism, associated with irritability, was probably the exciting cause. The attacks, preceded by kleptomania, are epileptoid in type, since in them he is not conscious. The second patient was a congenital paranoiac, with systematized erotico-religious delusions, both persecutory and megalomaniacal. The third was an epileptic, with post-epileptio-maniacal attacks, followed by conditions of suspicion. The fourth was an epileptic, who, up to the age of fifteen, had grave epilepsy. It gave place to the epileptic, equivalent, mental state of unconsciousness. These states were followed by periods of paralucid, suspicional, hallucinatory irritability. He "could then walk through the sea and cut the earth in half." These patients made a seemingly joint attempt to escape. The four were seated in the grounds together, after the usual walk. The third and fourth were in their usual post-epileptic mental state. The patient first described suggested that they all go home, more from a spirit of mischief than any serious desire for escape. The third patient rushed on the attendant and threw him down, while the other three rushed for the woods. He did not have a clear consciousness of what he was doing, as he contented himself with attacking the attendant. He had no recollection of his violence nor of the suggestion of escape, albeit his conduct was evidently prompted by it. The paranoiac looked upon the whole occurrence as a providential means of freeing him from his persecutors. The other three patients he regarded as lunatics, but as they were, in his opinion, instruments of providence, he accepted their aid.

Strictly speaking, there was in this case no real concerted action on the part of the insane. There were several coincidences which led to the appearance of such a concert. The post-epileptic states rendering the patient liable to respond to suggestions from without in an indefinite manner, the paranoiac delusional state and logical perversion, all combined to give the appearance of a plot to what was the result of quickly-suggested action.

In a similar unreported "plot" a paretic dement, a paranoiac, an epileptic, and a hebephreniac made a united attempt to escape. The paretic dement and paranoiac agreed to escape; the first to secure his unlimited, delusional wealth; the second to escape from his persecutors. The hebephreniac, who was mentally much enfeebled, had accepted the grandiose delusions of the paretic dement so far as to enter into some of the million-making, delusional plans. The epileptic was present when the attempt was made, and his action was the result of pure suggestion, as he was in a state of post-epileptic, dazed consciousness. The paretic dement and paranoiac threw the attendant down. The epileptic seized the keys, while the hebephreniac held the attendant's hands. The attempt failed, because the epileptic turned the key upside down in the lock and broke it.

---

[1] Alienist and Neurologist, 1887.

These instances show that the insane may be influenced by conditions surrounding them, providing these do not antagonize their egotism.

In the last case were seen (in the paretic dement and hebephreniac) instances of what Ball has designated *folie transformée* (transformed insanity).

These cases show that an acquired predisposition resultant on emotional states may produce the same effects as an inherited predisposition. Paretic dements are, as I pointed out over twelve years ago, peculiarly liable to this *folie transformée.* Thus, emotional exaltation and their mental enfeeblement alike predispose them to it. One paretic dement was going to secure an immense (delusional) increase of capital by marrying his daughter to a fellow paretic dement. Two ex-commission merchants formed a paretic dement partnership involving billions of capital. A paretic dement alderman had delusionally secured millions for franchises from them. A paretic dement gambler based his millions on his delusional winnings from his fellow-patients. Morandan de Monteyel[1] and C. H. Hughes[2] have independently arrived at the conclusion that morbid simulation of insane delusions by the insane may underlie the seeming adoption of insane delusions by the insane. That this is possible is shown by a case reported by S. V. Clevenger,[3] in which a melancholiac imbibed unconsciously the delusion that he was to be hanged for his crimes from once hearing a wail over a similar delusion by a primary confusional lunatic. Clevenger also cites the case of three insane sisters having identical delusions of persecution who agreed to commit suicide by hanging, in which two of them succeeded.

Nolan[4] cites an instance in which two brothers became demonstrably insane after long residence together. After admission to the insane hospital "they not only continued to reflect the mental condition one of the other, but they absolutely originated individually a common delusion and expressed it in almost identical words." From this fact, which he cannot consider exceptional, Nolan claims that "Spitzka's remarks on 'communicated insanity' appear strange from so eminent and thorough an observer. 'Imitation may occur,' says Spitzka, 'in real insanity, but it is limited to delusive conceptions, which are accepted by weak-minded lunatics from more intelligent ones in what the French call *folie communiquée* and *folie à deux.*'" Nolan in this criticism ignores the fact shown by his own reported cases and his excellently logical psychological analysis of them, that in *folie simultanée* (which his cases are) imitation is a subordinate factor, non-existent in pure types. The reverse is the case in most instances of *folie à deux,* and this is peculiarly true of *folie communiquée.*

Communicated insanity may exist independently of insane predispo-

---

[1] L'Encephale, No. 4, 1882.

[2] Alienist and Neurologist, July, 1883.

[3] Chicago Medical Journal and Examiner, 1883.

[4] Journal of Mental Science, vol. xxvii.

sition, and other conditions cited by Lasègue. Ball admits this when he points out that—

"The influence of the insane on crowds cannot be contested. The epidemics of religious insanity, of hysterical religion, and of demonolatry attest this too emphatically."

Anent the mental state of crowds, Fournial[1] remarks that a crowd may be considered as a being which feels and acts but does not reflect. This individualization is the result of the unconscious but suggestive diffusion of an emotion. It is produced by imitation or by mental contagion. Such a mental state predisposes to the reception of insane notions.

The question arises how far can this influence of the insane on the sane extend. The English and American witchcraft epidemics show that entire communities may be affected thereby. The same is shown in the crusades, in the "dancing mania,"[2] and to a certain extent in the flagellants.[2] The history of "fire" panics in crowded theatres illustrates the psychological principle involved in "transformed insanity." The principle underlying the frequent testimony of the sane to the truth of the delusions of the insane appears in the remark of Savage,[3] that "extraordinary complications from the occurrence of combination or agreement of persons of unsound mind upon the same delusion."

Despite all dicta on the subject, the insane may therefore have accomplices and abettors; some sane, some insane. Freeman, of Pocasset, Mass., was a paranoiac; his wife was an ill-balanced woman, but aiding and abetting them were, as Dr. Folsom[4] has shown, sane Second Adventist fanatics. In Sandwich, Ill.,[5] a sane father and his paranoiac son abetted an insane mother in what proved to be a fatal forty-day fast preparatory to the immaculate delivery of a new Christ. The paranoiac son gave inventively stupid "spiritual" reasons why an autopsy disproved the existence of pregnancy.

Ball has not put the case too strongly, however, when he says that the sane of mediocre mental calibre are much more apt to accept the delusions of the insane than their fellows. More than one lunatic recognized as insane by his fellow-patients has been released as sane by a "sane" jury on the testimony of "sane experts" to demonstrate his "sanity" by a brutal, uncalled-for homicide.

How far this influence of the insane on the sane extends has been shown in more than one revolution or religious sect. As Lombroso[6] has shown, Marat, Billaud, Lebon, and Carrier were degenerate lunatics who, aided by Burke's attempt to create a "White Terror," by Marie Antoinette's inventively stupid mendacity, and by the selfish partition schemes of Austria

[1] Psychologie des Foules. [2] Hecker, Epidemics of the Middle Ages.
[3] Insanity and Allied Neuroses.
[4] Boston Medical and Surgical Journal, 1879.
[5] American Journal of Neur. and Psych., iii. [6] Criminal Man.

and Prussia, were able to impose their suspicional delusions on the French people and produce the undue severities of the "Red Terror." Masaniello was, as Sir Walter Scott[1] has shown, a paranoiac who, aided by very similar conditions to those just described, became the head of the Neapolitan revolution. Rienzi was also, as Lombroso[2] has proven, a paranoiac, guilty, when a ruler of Rome after his successful revolution, of a thousand insane inconsistencies. The paranoiac Julia de Krudener was strongly potential in forming the "Holy Alliance" against Napoleon I. The paranoiac Joan of Arc[3] broke the spell of terror England had cast over France. The paranoiac Louis Reil[4] nearly shook off Canadian rule over the Indians of the Northwest.

John of Leyden, Muggleton, Naylor, and Johanna Southcotte were paranoiacs able to impose their delusions of divinity, of prophetship, or of divine maternity on numerous followers, and thus establish religious sects. The pseudocyesis of Johanna Southcotte, which recalls that of Mrs. Lay, was accepted as pregnancy with Christ, by numerous devotees, whose faith in this "pregnancy" endured, albeit it was "protracted" for years. Religion and revolutions are sufficiently out of the common to be accepted as predisposing to insane delusions. In finance the same story is told. Clouston[5] had under his care a paranoiac who was able to impose his delusion, anent the "elixir of life," on sane people, and sell them the same while on parole from the insane hospital. That Patterson, the "Darien Schemer," was a paranoiac, Macaulay's[6] account leaves no doubt. His "Darien Scheme" ruined half Scotland.

One curious case forensically analyzed by Liman[7] illustrates the origin of certain sexual anomalies in religious sects. A forty-nine-year-old man charged with incest was examined by him. The man's wife, who made the complaint, gave details which left no doubt that the man was a religious paranoiac. Liman found that he had hallucinations and delusions. It was divinely revealed to him that from intercourse with his daughter would spring the everlasting son, who would free his family from sin. This divine command he obeyed. The daughter was a well-built, very stupid, nineteen-year-old girl, who had not realized her father's mental state, and had been the tool of a lunatic.

Lombroso[8] has collected a wealth of instances in which paranoiacs have led whole communities into religions. His cases demonstrate that the race has not so far advanced in evolution as to be able always to recognize the absurdity of persecutional delusions.

A recent lynching in Wisconsin told the same story. The leader was

---

[1] Essays: Masaniello.
[2] Man of Genius.
[3] Ireland, Blot on the Brain.
[4] Ireland, Through the Ivory Gate.
[5] Mental Diseases.
[6] History, vol. v. p. 341.
[7] Vierteljahrschrift f. Gerichtl. Med., B. xxxiii.
[8] Man of Genius.

a paranoiac, and he and two epileptic aids were adjudicated insane. The much-boasted civilization of the United States has afforded more than four instances during the last decade in which sane Americans worshipped paranoiacs as deities.

Helweg[1] says, the influence of the insane upon the sane is very rare, except under certain conditions, which can be laid down with tolerable accuracy. As an almost universal rule those who become insane in consequence of association with the insane are neurotic or somewhat feeble-minded. More women are affected than men. It is more likely that an insane person who is able to pass muster as being in the possession of his intellect should influence another in the direction of his delusion than if he be outrageously insane. There must be some method in his madness. The most common form which cases of communicated mental disorder assume is that of delusion, and especially delusions of persecution, or of being entitled to property of which they are being defrauded by their enemies. Acute mania, profound melancholia, and dementia are not likely to communicate themselves. If they exert a prejudicial influence, it is by the distress these conditions cause in the mind of near relatives. A young person is more likely to adopt the delusions of an old person than *vice versa*, especially if the latter be a relative with whom she or he has grown up from infancy. It is not easy to determine to what extent the person who is the second to become insane affects the primary agent. It simplifies[2] the comprehension of this affection to start from the acknowledged influence which a sane person may exert upon another sane person. It is not a long road from this to the acceptance of a plausible delusion urged upon the hearer with all the force of conviction and the vividness of a vital truth.

Werner[3] finds that there is usually a predisposing factor in the secondary case. Where heredity or mental feebleness is not present, emotionalism in man or hysteria in woman acts in this respect.

Jorger[4] claims that insanity may be induced either by emotion or by imposition of delusions. He claims that the following elements for differential diagnosis exist:

EMOTIONAL TYPE.	INTELLECTUAL TYPE.
The primarily insane patient is an unconscious agent.	The primarily insane patient is an active agent.
The psychosis in his case has no bearing on the induction of the psychosis.	The psychosis in his case must be a systematized one.
The obvious elements in the psychosis of the primary case play an active part. The induced psychosis is acute in type.	The delusions of the primary case of psychosis and his activity play a decided part. The acquired delusions are systematized in type, and the induced psychosis seemingly chronic.

[1] Hygeia, 1892.
[2] Brain, vol. x., 1888.
[3] Allgemeine Ztschrft. f. Psych., B. xliv.
[4] Ibid., B. xlv.

Chambard[1] points out that criminal paranoiacs of degenerate type may foment revolts in insane hospitals in which epileptics and other paranoiacs may take part.

Recognition of "transformed," "communicated," and "imposed" insanity is therefore of much importance from the forensic stand-point, as I pointed[2] out nearly a decade ago. It is also of considerable importance from prophylactic reasons. Incarceration of a "harmless" paranoiac may prevent a political conspiracy, a dangerous religious sect, or a financial crash. His release might precipitate these. Responsibility in cases of this kind should, as de Monteyel has shown, be determined by the mental state of each individual.

REVIEW OF MEDICINE.

MEDICINE.

IN CHARGE OF JUDSON DALAND, M.D.,

Instructor in Clinical Medicine and Lecturer on Physical Diagnosis and Symptomatology in the University of Pennsylvania, Assistant Physician to the University Hospital; Physician to the Philadelphia Hospital and to the Rush Hospital for Consumptives.

ASSISTED BY

JOSEPH P. TUNIS, M.D.,

Philadelphia.

The Results of Expectant Treatment in Three Hundred and Twenty-three Cases of Typhoid Fever. (*Medical Record*, New York, November 26, 1892, page 609.) By Dr. Arnot Spence.—Calomel in doses of five or ten grains was given to begin with, if the disease was not too far advanced. Whiskey was administered when stimulation was necessary, and to reduce continued pyrexia (over 105°) the cold pack was the usual means employed. When possible, the water-bed was used in high-temperature cases, and only occasionally antifebrin or phenacetin resorted to, and then only in single doses. The writer believes that the value of antipyretic drugs in all febrile diseases is overestimated, and when the patient is fortunate enough to survive their use he is very seldom, if ever, benefited by them.

Diarrhœa was treated by bismuth combined with small doses of opium. If very obstinate, five-grain doses of naphthalin were given every two hours until relieved.

For intestinal hemorrhages, laudanum in five- or ten-drop doses was administered at short intervals. The nursing was most strictly attended to.

[1] Ann. Médico-Psych., s. vii. t. xiii. p. 240.

[2] Alienist and Neurologist, April, 1883.

The diet was wholly a fluid one, consisting mostly of milk, together with strained meat-broths, and was continued until a full week of normal temperature had passed, and even then a full diet was reached gradually. As a matter of routine the patient was kept in a reclining position, and was not allowed to rise or leave the bed under any circumstances.

Age.	Cases.	Deaths.	Mortality.
			Per Cent.
Under ten years	4	1	25.0
From ten to fifteen years	8	1	12.5
From fifteen to twenty years	67	5	7.4
From twenty to twenty-five years	104	13	12.5
From twenty-five to thirty years	84	13	15.4
From thirty to thirty-five years	27	3	11.1
From thirty-five to forty years	17	7	41.1
From forty to forty-five years	6	3	50.0
From forty-five to fifty years	3	1	33.3
At fifty years and over	3	0	0.0

Nearly four per cent. of the cases were moribund on admission. Over three per cent. died of accidents incidental to intestinal lesions, such as hemorrhage, perforation, and peritonitis. One and a half per cent. died of pneumonia, and 6.8 per cent. died of the typhoid poison itself and the resulting exhaustion. The lowest mortality was in those cases between the ages of fifteen and twenty years.

The Cause of Heart-Failure in Pneumonia. (*New York Medical Journal*, July 30, 1892.) By Dr. L. Harrison Mettler.—The theories to account for this condition may be termed briefly the mechanical and the chemical. The former of these is the older, and attributes the cardiac weakness occurring about the crisis of the disease to the changes produced in the heart-muscle by the prolonged high temperature, and to the difficulty which the heart experiences in forcing the blood through the obstructed lung. The chemical theory assigns the heart-failure to a nervous source, and claims that the nervous apparatus controlling the circulatory system is poisoned by certain toxic matters, ptomaines, and other substances retained in the blood. But the latter theory does not explain the nature of the poison, the method of its production, or its peculiar action.

Dr. Mettler believes that the origin of the whole trouble is a poison floating in the blood and irritating the nerves and nervous centres. The true nature of this poison is as little known as many of the other specific constitutional diseases. All explanations of its *modus operandi* must be conjectural until more of its nature is known. He does not believe that this poison consists simply of the uneliminated matters of the blood, for in uræmic poisoning and other diseases accompanied by diminished elimination we do not have exactly the same phenomena that we do in the crisis of pneumonia. It is a new substance, and in all likelihood a ptomaine produced by some micro-organism in the lungs. This ptomaine begins to affect the nervous system

from the very beginning of the disease, and so causes its constitutional disturbances and general symptomatology. It affects all the nervous elements alike, modifying the regularity of their functions, and, for a time, maintaining a kind of compensation between motor and inhibitory forces. This, of course, exhausts all the tissues involved. About the time of the crisis of the disease, if the process does not extend, the micro-organisms cease to pour their poisonous products into the blood, because the cycle of their life-history is ended. The influence of these products is thus suddenly withdrawn, and the heart, being therefore deprived of that which, up to the crisis, had been overstimulating and otherwise injuriously affecting it, collapses.

Dysentery in Nicaragua. (*Therapeutic Gazette*, December 15, 1892.) By Dr. Judson Daland.—There are three varieties of this disease met with in Nicaragua,—the malarial, the endemic, and the epidemic. Of these three, by far the most common is the malarial. The prodromal symptoms are malaise, pain in the back, in the head, and in the umbilical region, shooting toward the pubes. Mild cases show slight febrile and circulatory disturbances. In the more severe cases there is a moderate elevation of temperature, varying between 102° and 104° F. The stools are at first composed entirely of pure mucus. They are small in quantity and often attended with tenesmus; soon the mucus is streaked with blood.

Acute hepatic congestion and acute hepatitis, associated with jaundice, are not infrequent complications. Hepatic abscess is rare. Dr. Bermudez, who has had a great deal of experience with these cases, has found that the following treatment is the most successful: For an adult, six grains of quinine morning and evening in conjunction with—

℞ Ammonii chloridi, gr. v;
Pulv. ipecac., gr. v;
Tinct. opii, gtt. x–xv.
Sig.—To be repeated every two hours.

In the way of food nothing is permitted except milk, or milk and lime-water, to which sago may be added.

Dysentery is prevalent at all times in Nicaragua, and is one of the most common diseases to which the natives are subject.

Blood-Letting as a Remedy. (*Edinburgh Medical Journal*, October, 1892, page 305.) By Dr. Robert Somerville.—It is interesting to inquire how it is that a remedy which fifty years ago was used every day by every medical man should at the present time be used so sparingly and on such rare occasions. It is not many years ago that blood-letting was the sheet-anchor in the treatment of inflammation. It was during the sixteenth century that the remedial value of this procedure was questioned by many. Literature abounds with illustrations where the use of this powerful agent

was abused, but may we not be going to the other extreme in not resorting to its use more frequently? While the routine treatment of blood-letting is needless and harmful, the judicious abstraction of blood may often accomplish great good. General blood-letting is not a cure for inflammation. In some few cases it may relieve grave and threatening symptoms, and gain time for a cure by nature's own therapeutics. But experience seems to show that topical bleeding is not without use in many inflammations. General blood-letting is undoubtedly most valuable in many cases of over-distention of the right side of the heart, and in some cases of apoplectic seizure.

THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,
Professor of Therapeutics, McGill University, Montreal, Canada.
ASSISTED BY
D. I. EVANS, M.D.

Dressing to prevent Permanent Pitting in Small-Pox. (Pausement permettant d'éviter les cicatrises variolique indélibles. *Bulletin Général de Thérapeutique*, August 8, 1892.)—M. Coste, noting that the pustules in the buccal mucous membrane habitually heal without leaving cicatrices, proposes a dressing to maintain a similar humidity for the skin of the face. From the first appearance of the eruption, the whole of the face is covered with folds of boracized lint, soaked in a solution of boracic acid. Openings are left for the eyes, nose, and mouth, while the different hollows of the face are filled up with tampons of cotton-wool. The lint is then covered with oiled silk, in which corresponding openings are made, and the whole is secured by a bandage of tarlatan. Every four hours the silk is removed and the lint thoroughly dampened by means of an atomizer, with the solution of boric acid. The lint should be changed as soon as soiled. Not only does this treatment hinder the formation of scars, but it also hastens the fall of the scab.

A Case benefited by the Administration of Oxygen during Anæsthesia. (*British Medical Journal*, July 23, 1892.)

Dr. Long, of Guy's Hospital, reports a case of long-standing empyema in the left side, which had been several times aspirated. On an occasion, three months previously, while under the A.-C.-E. mixture, for the resection of a rib, great lividity supervened on placing him on the right side, and the operation was with difficulty completed with the patient on his back. This time the operation was to be extended, and he was again anæsthetized with the A.-C.-E. mixture, but it was not long before he stopped breathing on several occasions, and it seemed probable that the operation might have to be discontinued. The tube from an oxygen bottle was then introduced under the cone and a gentle stream turned on. His breathing very quickly

improved, and the operation, which lasted about forty-five minutes, was finished without further anxiety, the respiration and pulse remaining good.

The Use of Menthol in Pruritus. (Le Menthol contre le Prurit. *Bulletin Général de Thérapeutique*, July 23, 1892.) Par M. Colombini.—The author, after numerous careful experiments with menthol in diseases of the skin associated with pruritus, thinks it of distinct value. Excluding parasitic affections, in which pruritus is symptomatic only of the presence of the parasite, he finds menthol of much value in those cases where the pruritus is associated with more or less dermatitis. In these cases menthol may be combined with medicaments likely to be of service in relieving the latter, such as zinc oxide, bismuth subnitrate, or salicylic acid. In pruritus of a neurotic character some relief may be expected, but the results have not been so satisfactory. Menthol may be employed where no ulcerations exist, in the strength of five or ten per cent. of the solvent or ointment. Its effect on the superficial nerves, producing first the sensation of heat, followed afterwards by cold, is sometimes disagreeable, and interferes with its application over extensive surfaces.

Treatment and Curability of Arterial Cardiopathies. (Traitement et curabilité des Cardiopathies artérielles suite cardio-sclérose—artério-sclérose du cœur. *Bulletin Gén. de Thérapeutique*, Nos. 30–32 and 34, 1892.) By Henri Huchard, M.D.

In this very interesting and important monograph the writer distinguishes between arterial cardiopathies and valvular cardiopathies, the origin, course, and termination of each being distinct. He groups the causes of the disease under the headings: 1. Diathetic (chronic rheumatism, gout, etc.). 2. Toxic (alcoholism, plumbism, etc.). 3. Infectious (typhoid, variola, etc.). Respecting the course and symptoms of the disease he enunciates the following six clinical laws, the first three relating to intra-cardiac, the last three to cardiac conditions.

1. Arterio-sclerosis of the heart, like general arterio-sclerosis, being the effect and not the cause of arterial hypertension, is characterized during the greater part of its clinical evolution by symptoms of this hypertension.

2. In arterio-sclerosis, under the influence of arterial stenosis, either organic from endarteritis or functional from vascular spasm, the viscera and the various systems are in continual danger of fatigue or *meiopragia*.

3. Renal insufficiency, to which we may add hepatic insufficiency, is an early and almost constant symptom of arterial cardiopathies, even in the absence of albuminuria.

4. Owing to the degeneration of the myocardium from *endarteritis obliterans* an arterial cardiopathy is in constant danger of cardiac dilatation or attacks of angina.

5. Owing to this same degeneration, arterial cardiopathies are nearly always accompanied by symptoms of arhythmic action.

6. Owing to the arterio-sclerosis being general, arterial cardiopathies are often associated with sclerosis of other organs; they terminate not only by asystole, cardiectasis, and sudden death, but also by cerebral hemorrhage, uræmia, etc.

The evolution of these conditions he divides into three periods, as follows:

1. Arterial: (*a*) Dynamic, characterized by permanent increase in vascular tension, preceding the (*b*) physical, indicated by the *début* of general arterial sclerosis.

2. Cardio-arterial, characterized by endarteritis first of the peripheral vessels, followed by those of the viscera and heart-muscle.

3. Mitro-arterial, characterized by dilatation of the cavities of the heart and of the auriculo-ventricular orifices, by the enfeeblement of the heart, and at last by the diminution of arterial tension. The disease in this stage being a purely cardiac affection must be treated as such.

In the treatment of the first stage (the arterial), Dr. Huchard recommends a diet of milk foods, vegetables, eggs, and well-cooked meat, but as little liquid as possible. The action of the skin is to be encouraged by frequent baths, gentle friction, and massage. The drug on which he places most reliance is nitro-glycerin, on account of its action as a vaso-dilator. For ten or twelve days in each month, he prescribes from two to four drops of a one-per-cent. solution night and morning. This may be increased to as much as twenty drops daily. During part of the second period (the cardio-arterial) he continues the use of the nitro-glycerin. He has also much confidence in the use of the iodides in this stage. Sodium iodide he prefers to the potassium salt, as the latter, when used for a long time, acts as a heart-poison. The sodium salt is better borne by the stomach, and although perhaps less active, is less apt to cause iodism. The iodide of strontium, or calcium, may also be used. He begins with small doses (gr. ii. to v.) per day taken in milk, gradually increasing it as high as fifteen, thirty, or forty-five grains per day. It is given for twenty days in each month, and its use continued for at least a year. For the other ten days in each month the solution of nitro-glycerin (gtt. ii. to iii.), night and morning, is prescribed. Dr. Huchard claims the most satisfactory results from perseverance in this treatment, citing several cases where dyspnœa, angina, and other heart symptoms completely disappeared. Towards the end of the second period he recommends, in addition to the iodide, the heart tonics, such as digitalis, sparteine, etc.

In the third stage (the mitro-arterial) the writer condemns the indiscriminate use of revulsives, such as blistering or the cautery. If palpitation be excessive, and keep the patient from resting, he uses cold applications to the precordial region. He continues the milk diet, and employs digitalin in an alcoholic solution, one to one thousand; of this from ten to fifteen drops daily for five or six days at a time. He frequently prescribes the following:

℞ Alcoholic tincture of digitalis,
Tincture of squills,
Tincture of aconite root, āā gr. v.—M.
Of this from ten to fifteen drops to be taken daily for eight or ten days.

He condemns Vertel's method, but thinks the Swedish method of gymnastics of much value. The article ends with a brief consideration of the value of the various mineral waters in the treatment of this disease. He thinks, wisely chosen, a course may be of service. The action of waters too strongly saline, of sulphurous waters, or those which necessitate residence in too high altitudes, must be avoided. The sea-coast also may be found too stimulating.

Treatment of Accidents during Anæsthesia. (*Therapeutic Gazette*, October 15, 1892.) By H. A. Hare, M.D.

In a very interesting address on recent advances in therapeutics, Dr. Hare calls attention to the following facts regarding emergencies under anæsthesia:

1. The worthlessness, or worse, the danger of using the faradic current as a means of resuscitation in accidents arising from anæsthesia. The action of such a current on the diaphragm, could it be obtained, would be to produce a rigid tetanic spasm, a condition fraught with the greatest danger. It is impossible, however, to influence the phrenic nerve by any but strong currents, for the resistance offered by the cervical tissues is too great for feeble currents to penetrate them. The pneumogastric is more likely to be influenced by such a procedure, as experiments conducted by Dr. Hare and Dr. Martin proved, and any inhibition of the heart's action added to the depression of the anæsthetic, or to the engorgement of the ventricles already present, might favor greatly a fatal result. Any good results which may occasionally have been obtained must be attributed to the action of the current merely as a peripheral irritant producing reflex action.

2. The danger, under certain conditions, of inversion of the patient during anæsthetic narcosis, if threatened by respiratory or cardiac failure. This procedure is only justifiable when heart-failure is indicated by marked facial pallor. If the respiration be at fault, we should carefully avoid any inversion. The presence of still more venous blood about the already exhausted respiratory centre cannot aid it, but only injure it. Further, by inversion we may distinctly interfere with the respiratory act by compression of the diaphragm, through displacement of the abdominal viscera. This is specially liable to occur in persons with large pendulous abdomens, or in persons who have recently suffered, or are suffering, from tumors of the abdomen.

3. He emphasizes the importance, during the administration of anæsthetics, of watching the action of the diaphragm. He thinks it an invariable rule that the first evidence of the full effect of ether is seen in the diaphragm. He has been able to foresee danger by watching this muscle

when the examination of the ordinary respiratory act, as a whole, failed to show any abnormal changes. As soon as the movements of the muscle become abortive, or irregular, it is time to stop the anæsthetic.

4. Another point of much importance in the treatment of persons suffering not only from the over-effects of anæsthetics, but also from the depression caused by other accidents, is the use of heat. He found that it was possible to lower the bodily temperature of a dog many degrees by prolonged anæsthesia, and that in man a fall amounting to four degrees might occur in comparatively brief operations and with little or no loss of blood. Hence, the application of heat about the body of a person undergoing an operation is of the greatest importance, and its use only after the operation stultifies the operator, who forgets the old adage, "An ounce of prevention is worth a pound of cure." Care at the same time should be taken that the heat be not too great, and artificial heat-stroke brought about.

5. He strongly recommends the use of strychnine as a remedy for, and a preventive of, surgical shock and anæsthetic collapse. It must, however, be given in full doses. Not less than one-twentieth of a grain should be employed hypodermically every half-hour in an adult, and if the condition of shock or respiratory or cardiac failure be marked, one dose of as much as one-fifth of a grain may be given in this way. Disagreeable effects rarely, if ever, follow, and if they do they amount to little more than muscular twitching, while in the condition spoken of the man is on the brink of death and we cannot afford to make haste slowly.

He strongly recommends bromide of ethyl as an anæsthetic safer than chloroform, and almost, if not quite, as safe as ether. The profession, he says, is gradually coming to recognize the fact that anæsthetics are to be used like other drugs, because of distinct indications. In much the same way that the physician decides that digitalis is suited to one case and strophanthus to another, so should he recognize that one case is suitable for ether, another for chloroform, and another for bromide of ethyl.

NEUROLOGY.

IN CHARGE OF CHARLES W. BURR, M.D.,

Pathologist to the State Asylum for the Insane, Norristown; Visiting Physician to the Home for Incurables; Visiting Physician to St. Joseph's Hospital, Philadelphia, Pa.

Monoplegia from Passage of Electric Current. (*University Medical Magazine*, September, 1892, p. 822.) By Dr. Aluard White.

A mechanical electrician grasped the conducting cords leading from the dynamo for the purpose of ascertaining the strength of the current,—the positive with the left, the negative with the right hand. He was violently shocked and fell to the floor, but soon was able to walk to his room, a few feet distant. He complained of being dazed, and had much difficulty in breathing. The respiration, on the left side especially, was shallow and

jerky. Within an hour there was complete motor and sensory paralysis in the entire left arm, and a large part of the left chest. Sensation terminated abruptly both in front and behind at the median line. The temperature of the left arm was two degrees lower than the right. Twenty days later there was no more wasting than could be accounted for by disuse. At the end of a month the patient had recovered, except for some muscular weakness. He had had no treatment.

Surgical Treatment of Epilepsy. (*American Journal of the Medical Sciences*, November, 1892, p. 503.) By Drs. A. G. Gerster and B. Sachs.

In the above paper are reported the results in ten cases of epilepsy. Seven cases were traumatic, one due to ear-disease, one infantile hemiplegia with epilepsy, one due to early acute brain-disease. Sachs is strongly of the opinion that the application of the faradic current to the dura helps to localize centres much more carefully than any of the customary rules. He thinks, however, that in cases of tumor and in cases in which the brain-tissue has been seriously altered by disease the electric response may not be prompt, and resort must be had to the older methods. Nevertheless, in one case of cystic tumor of the motor area the "electric method" proved satisfactory.

There was not a single decided cure in the ten cases operated upon, the probable reason being that, though a focus of disease is the actual cause of the epilepsy, this epilepsy does not manifest itself, as a rule, until wide-spread changes have appeared throughout the entire brain. It is the general sclerosis that keeps up, as it were, the epileptic habit. The inference is that we should remove the focus of disease before secondary changes have been set up. The only way to cure epilepsy is to prevent its development. The excision of cortical tissue seems after all to be of questionable merit.

Surgical versus Educational Methods for the Improvement of the Mental Condition of the Feeble-Minded. (Proceedings of the Association of Medical Officers of American Institutions for Idiotic and Feeble-Minded Persons, 1892.) By Frank G. Norbury, M.D.

This paper is a strong protest against the surgical treatment of microcephaly. The author sums up the whole matter as follows: The condition is one of arrested development, occurring at or near the sixth month of gestation, and is not due to premature synostosis. There is a narrowing of the brain and skull in all diameters, accompanied by structural deficiencies of the central and cortical portions of the brain. Synostosis of the sutures and fontanelles may be concomitant, but not necessarily so. Examination of the brain shows structural peculiarities, such as complete or partial absence of convolutions, absence of corpus callosum, gyrus fornicatus, etc., atrophy of the lobes, especially of the frontal and occipital. Idiocy is a vice of the entire organism, and the improvement of the mental condition depends on the improvement of the entire physical system. This cannot be

done by surgical means, for brain-growth is not dependent on stimulus from such a source, but from true physiological education, the training of the bodily powers, without which no improvement can be expected.

A Case of Progressive Chorea with Atrophy. (Ein Fall von Progressiver Chorea (hereditaria, Huntington) mit Pathologischen Befunde. *Neurolog. Centralbl.*, No. xix. and xx., October, 1892.) By Drs. P. Kronthal and S. Kalischer.

The patient's grandmother, mother, mother's cousin, and sister all suffered from chronic chorea. Her father died from phthisis. The disease appeared during her thirtieth year. She died from fracture of the skull when forty-five years old. The authors give a review of the literature of the entire subject, and have made a very exhaustive microscopic study of the patient's brain, spinal cord, and peripheral nerves. Lesions were found throughout the entire cerebro-spinal axis, with very slight changes in the peripheral nerves. The authors are in doubt, however, whether the changes found stand in causal relation to the disease.

The Frequency of Renal Disease among the Insane. (*Journal of Mental and Nervous Diseases*, November, 1892, p. 812.) By E. D. Bonchurant, M.D.

The author examined the urine from one thousand and thirty-four cases in the Alabama Insane Hospital. In five hundred and sixty-one both casts and albumen were found; in one hundred and twenty-one albumen alone was present, and in one hundred and fifty-two both were absent. In twenty-five autopsies no normal kidney was discovered, and three out of every four showed serious and extensive disease. In one hundred other autopsies, no reports of which are given, the author found the same proportion. The author is not prepared to dispute the statement that insanity accompanying renal disease is apt to assume the form of melancholia. He claims, however, that renal disease is frequent in maniacal excitement, and well-nigh universal in puerperal, opium, and alcoholic cases, whatever form the mental symptoms assume.

PEDIATRICS.

IN CHARGE OF T. M. ROTCH, M.D.,

Assistant Professor of Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

ASSISTED BY

E. M. BUCKINGHAM, M.D.,

Instructor in Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

Hypertrophy of the Spleen in Children. (*Brit. Med. Journ.*, 1892, vol. i. p. 854; *Revue Mensuelle des Maladies de l'Enfance*, November, 1892, p. 536.) By Colcott Fox and Ball.

This paper is based on observations on cases of hypertrophy of the spleen, occurring in children from four months to two and a half years old. In five cases the cause appeared to be acute general tuberculosis; but the remaining sixty-eight did not depend upon any of the affections that commonly give rise to this symptom, such as leucæmia, malaria, etc. In none of these cases could rachitis be absolutely excluded, and in the greater part of them its manifestations were evident. Hereditary syphilis existed in forty-one per cent., and in the remainder could neither be affirmed nor denied. Hypertrophy of the spleen was noted in forty-eight per cent. of one hundred and fifty-five cases of hereditary syphilis collected by the authors; and it is generally admitted that hypertrophy is common in this disease. From the histological point of view it is often impossible to distinguish between this hypertrophy in hereditary syphilis and that which accompanies rachitis.

General Peritonitis; Operation; Recovery. (Routier, *Archives of Pediatrics*, September, 1892, p. 718.)

The case was presented to the French Academy of Medicine. The condition at the time of operation was so severe that Routier hesitated about interfering, the symptoms being those of peritonitis, including vomiting and collapse. Expecting to find an appendicitis with suppuration, a free incision was made in the right iliac region. A large quantity of pus escaped; the peritonitis was general, but the cæcum was healthy. A new median incision was made, and the cavity thoroughly washed with water containing naphthol. The incisions were left open, and strips of iodoform gauze were introduced in all directions to facilitate the escape of pus. Suppuration was free enough to make daily renewal of these dressings necessary, and for three days milk and bouillon taken by the mouth were discharged through the wound. Contrary to expectation, the patient improved rapidly and made a complete recovery.

Myocarditis in Typhoid Fever, Scarlatina, and Diphtheria. (*Deutsche Archiv für klinische Medicin*, 1891, t. xlviii., Hft. iii. and iv., p. 369; *Revue Mensuelle des Maladies de l'Enfance*, November, 1892, p. 534.) By Romberg.

The occurrence of important cardiac phenomena, such as weakness, fainting, sudden death, etc., often calls the attention of physicians to the heart in the acute infectious diseases. The author has studied the lesions of the cardiac wall. He finds dilatation and softness of the heart and anæmia of its muscle, together with swelling or fatty degeneration in certain regions. Lesions of the endocardium and of the pericardium are much more rare. The microscope demonstrates parenchymatous, interstitial, and vascular alterations. The cardiac fibres show granular, fatty, or hyaline degeneration or fissures, the nuclei are numerous, and are pale, swollen, and elongated. The interstitial tissue is studded with infectious nodules,

and, as the arteries are also the seat of inflammation, it is probable that this double arterial and interstitial inflammation is the origin of sclerosis of the myocardium. The author has noted other changes, including alterations in the nerves of the pericardium.

Torticollis due to Hæmatoma of the Sterno-Mastoid Muscle. (*Boston Med. and Surg. Journ.*, 1892, vol. xxxvi., p. 311.) By Dr. R. W. Lovett.

A child, six weeks old, was seen in August, 1890, for swelling of the neck. He was healthy and was born by an easy labor. In the left sterno-mastoid muscle was a lump the size of a hazel-nut. The muscle was slightly contracted, as a result of which the face was turned somewhat to the right. The head could be put in the normal position, but could not be overcorrected. The tumor was plainly felt and did not seem to involve surrounding structures, but to be limited strictly to the muscle. General treatment had little or no effect. The tumor gradually disappeared, and in two months was no larger than a very small cherry.

The child was next seen in January, 1892. It then presented a well-marked case of torticollis, due to contraction of the affected muscle. The tumor had entirely disappeared, and, were it not for the history, the case would pass for a routine case of torticollis. It is apparently the only case on record due to this cause.

Tubercular Peritonitis. (*Revue Mensuelle des Maladies de l'Enfance*, November, 1892, p. 545; *Münchener Medicinische Wochenschrift*, 1892, No. 34, p. 599.) By Poppert.

A girl of eleven, whose father had died of phthisis, and who had for some time complained of abdominal pain, and of slight gastro-intestinal troubles, suddenly had vomiting and pain with constipation. Diagnosis of intestinal obstruction was made, and two days later laparotomy was performed. The omentum was found retracted, and the peritoneum covered with granulations. The intestinal convolutions were adherent to each other and to the abdominal wall by numerous adhesions, which prevented search for the point of strangulation. Therefore an intestinal fistula was established, through which a litre of liquid fæces was evacuated. In five days fæces were again passed by the rectum, and the fistula closed some time afterwards. A crow that was inoculated with tubercle removed during the operation, died after a time of tuberculosis. Cases of obstruction by means of tubercular peritonitis are rare, and the author cites those reported by Schramm, Kummel, Knaggs, and König.

A Fatal Case of Laryngismus Stridulus in an Infant Six Days Old. (*Archives of Pediatrics*, November, 1892, p. 864; *Medical News*, Philadelphia, 1892, lx. p. 434.) By W. Sinclair Bowen, M.D.

The child was well up to the sixth day, when its nursing became hindered by dyspnœa. A slight rhinitis was the sole pathological change de-

tected. There appeared marked paroxysms of dyspnœa, characterized by a catch in breathing, followed by more spasmodic respiration, inspiration becoming more and more stertorous until it ceased. There were general tonic convulsions, involving nearly all the muscles, but especially those of respiration. The face and neck became livid and covered with large drops of perspiration. During the attack the pulse as well as respiration were suspended; but after it the child seemed as well as ever. One grain of potassium bromide was given each half hour, and paroxysms were treated with chloroform inhalation. No food was taken except a glassful of mother's milk, and the apparent cause of death was exhaustion.

Incubation Period of Mumps. (*Archives of Pediatrics*, November, 1892, p. 862; *British Medical News*, 1892, xi. 18.) By Arthur Stedman.

Cases were observed at St. John's Foundation schools, and the incubation periods, supposing each later case to have been infected by the first one, and at once, were as follows:

	Number of Cases.
Fourteen days	1
Fifteen "	2
Sixteen "	5
Seventeen "	4
Eighteen "	7
Nineteen "	4
Twenty "	1
Twenty-one days	2

The greater number being on the eighteenth day or just before or just after, while the earliest case was on the fourteenth, and the latest on the twenty-first day.

Treatment of Congenital Myxœdema by Hypodermic Injections of Thyroid Juice and by Grafts of the Thyroid Gland. (*Annals of Gynæcology and Pædiatrics*, November, 1892, p. 126; from *Lyon Médicale*, August 7, 1892.) By Robin.

The case of a child of seven years is reported. The family history was good. Before its birth the child's mother had fallen on her back, and gestation was prolonged to the eleventh month. The child weighed about fourteen pounds at birth, and it had the appearance, especially about the face, of having been blown up with air subcutaneously.

It did not develop either physically or mentally until about the sixteenth month. Towards the fifth year it contracted measles, and eighteen months later, whooping-cough, during the course of both of which diseases serious pulmonary complications developed. Since these attacks development has been slow, and there is now the appearance of a child of three or four years, with a physiognomy characteristic of myxœdema. The neck is large, and the thyroid gland cannot be felt. In the subclavicular fossæ and in both axillæ pseudo-lipomatous masses are found. The limbs are slightly

bowed, and the skin thickened. The heart is regular. The urine shows nothing abnormal, but constipation is marked.

The child had been treated by various remedies since it was fourteen months old, but without much result. Creosote apparently caused a slight diminution in the degree of infiltration, and also a slight elevation of temperature.

The author now decided to try hypodermic injections of the expressed juice of the thyroid gland of the sheep. Injections were made every day, and improvement began at once. The child recovered from its torpor, and became active; its countenance became natural, and it was easily amused, and became capable of walking alone. Œdema is rapidly disappearing, the skin is becoming red, and the temperature is no longer subnormal. Injections should be continued every day for about four months.

In another case the same author used grafts. For this method the operation must be done rapidly, and be thoroughly aseptic. An incision should be made below each breast, a freshly removed gland inserted, and the wound closed.

What becomes of the transplanted mass or how it acts is yet an open question.

Icterus Neonatorum. (*Revue Mensuelle des Maladies de l'Enfance*, December, 1892, p. 586; *Münchener Medicinische Wochenschrift*, 1892, Nos. 16 and 17.)

Chronic icterus is very rare compared with temporary icterus lasting ten days or more, which last is supposed to depend on modifications of the circulation and biochemical processes following birth.

Chronic icterus is often attributed to congenital lesions of the biliary passages; especially to those due to syphilis, of which they may be the sole manifestation. In these cases the bile-passages are obstructed by connective tissue. The author reports two cases in which the gall-bladder, the cystic duct, and the common bile-duct were entirely absent, being replaced by connective tissue. The two infants died of atrophy at eight and at three months, the liver and the spleen being both enlarged. In both cases the liver was clearly syphilitic, and one of them presented syphilitic lesions of the tibia as well.

In another group of cases, icterus is due to malformations. In the case of a child dead of tuberculosis at three months the author had opportunity to observe that absence of the gall-bladder does not of necessity manifest itself by any trouble during life.

Cirrhosis of the Liver in an Infant. (*Revue Mensuelle des Maladies de l'Enfance*, December, 1892, p. 587; *British Medical Journal*, 1892, July 16, p. 125.) By Stuart Tidey.

The author reports the case of a boy of eleven. One brother had died of leucocythæmia, one brother and two sisters were well. There was no

history of alcohol, but of an immoderate liking for potatoes. In March, 1891, he had vomiting and epistaxis without fever, but with albumen and bile-pigment in the urine. By December he had become very thin, but had at that time neither icterus, ascites, nor œdema of the feet.

After a year from the beginning, icterus was marked, liver dulness was somewhat increased, spleen slightly enlarged, mouth dry, with thirst and anorexia. The pulse was twenty-two and the child was delirious at night. By April 2 the urine was free from albumen and contained less bile-pigment than at first. The stools were liquid and yellow. The liver measured five finger-breadths in the mammary line. Icterus was less marked. There was severe abdominal pain, but no headache nor nausea. Three days after the last observation, albuminuria reappeared, this time accompanied by ascites; the liver was less hypertrophied, but the spleen more so. Day by day ascites and weakness increased, and the child died April 9, after forty-eight hours of complete anuria.

Autopsy showed multilobular cirrhosis of the liver. The mesenteric ganglia and those about the portal vein were large, but neither suppurating nor caseous.

Cirrhosis of the Liver. (*Revue Mensuelle des Maladies de l'Enfance*, December, 1892, p. 588; from *British Medical Journal*, 1892, vol. i. p. 258.) By F. W. Jollye.

The author reports two cases, a brother and sister, aged eleven and ten, both of which cases he attributed to measles and the use of vinegar. He reviews the English literature of the subject, and collects one hundred and twelve cases, occurring under eighteen years, and in which syphilis and alcohol could be excluded. He sums up as follows:

1. Alcohol, syphilis, tuberculosis, and malaria together will not account for more than half the cases. The most frequent causes are probably the exanthemata and errors of diet.

2. Interstitial cirrhosis of the liver is often found microscopically after infective fevers, particularly after measles and scarlatina, but what part is played by food and alcohol in producing it under these circumstances is not determined. Sometimes hypertrophic and sometimes simple cirrhosis is found.

3. High fever, rapid pulse, and frequent respiration make diagnosis difficult, and lead us to think of tuberculosis, typhoid, or other febrile diseases.

4. Epistaxis or other hemorrhage, together with icterus, occurring in children whose health is failing from no known cause, should call attention to the liver.

5. Half the cases are between the ages of seven and thirteen. More than two-thirds are in boys.

6. In spite of temporary alleviation death may be expected within three years.

SURGERY.

IN CHARGE OF B. FARQUHAR CURTIS, M.D.,
Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

Dislocation of the Semilunar Cartilages of the Knee. (Die Luxation der Semilunarknorpel des Kniegelenks. *Beiträge zur klin. Chirurgie*, 1892, ix. Heft 2, p. 435.) By Professor Bruns.

Bruns reports four cases in which he operated successfully for dislocation of one of the semilunar cartilages, and collects others from literature to the number of forty-three. The dislocation affected the internal cartilage twenty-seven times out of the forty in which this point is specified, contrary to the opinion usually held. The dislocation is usually partial, and generally concerns the anterior portion, although the posterior end, or even the middle third, of the cartilage has been found torn from its attachments. A rarer form of injury is that in which the cartilage is wholly or partly torn across, or even crushed into a shapeless mass of fibres at one end. The dislocation follows almost always upon a traumatism, but in some cases a gradual loosening of the attachments seems to take place, a sort of spontaneous dislocation following. But Bruns emphatically denies that it is liable to follow over-distention of the capsule as in "hydrops"; in fact, he considers short and strong ligamentous structures as necessary for the displacement, which, in his opinion, occurs in forced rotation, especially with the knee flexed.

The diagnosis should be easy by reason of the peculiar locking of the joint, and the presence of the displaced meniscus close to the joint-cleft, where it slips in and out on motion of the knee. In some cases the cartilage cannot be felt, and the joint-cleft is often found widened and more evident than normal, and somewhat tender. Treatment of the fresh dislocation would consist of immobilization for some four or six weeks, but even then it will not, as a rule, bring firm adhesions. Where the dislocation has become habitual, only operation can serve, and here it seems to matter little whether the displaced part of the cartilage is resected or returned and sutured in place, for the functional results seem to be perfect in either method even where the cases have been followed for years. Twenty-four cases were treated by extirpation, the rest by suture, all recovering.

A Unique Derangement of the Knee-Joint demanding Surgical Interference. (*Medical Record*, New York, July 16, 1892.) By Professor R. F. Weir.

Weir describes two cases in which he found a jumping of the patella in flexion, with partial locking of the joint, the patient being unable to flex the knee when fully extended and held in the air, without first resting the foot on the ground and so partially relaxing the tendon of the quadriceps. Both cases occurred in elderly women, and as the disturbance of function

was severe, the joints were opened. In the first case a thickened fold of membrane was found to extend across the posterior surface of the patella, hanging down about half an inch when the patella was lifted up, and catching on the anterior surface of the condyle, so as to interfere with free motion of the joint. In the second case, besides a similar band on the patella, was found a smaller mass of similar character attached just above the intercondyloid notch to the anterior surface of the femur. Removal cured both cases. In the first cases there was the history of a traumatism some time before, in the second of rheumatism and much kneeling in work.

Tuberculous Tumors of the Knee-Joint. (Sur une varieté peu étudiée de corps étrangers articulaires relevant de la synovite tuberculeuse. *Gaz. des hôpitaux*, April 30, 1892.) By M. Coudray.

Coudray reports seven cases in which he found localized deposits or growths of tuberculous tissue in the knee-joint with little or no alteration of the rest of the synovial sac. One tumor he removed by arthrotomy. The enlargement was usually situated in the cul-de-sac under the quadriceps tendon.

A Case of Loose Body in the Knee-Joint, due to Detachment of the Articular Cartilage (from the Condyle). (*British Medical Journal*, May 14, 1892, p. 1017.) By F. F. Burghard, M.S., F.R.C.S.

Burghard reports a case of a man of twenty-four years, who had struck his knee against a gate in vaulting about a week before, and in whose knee could be felt a movable body with some crepitus. Incision revealed that a small piece of articular cartilage had been chipped off the extreme edge of the internal condyle, with some of the subjacent bone attached to it. The fragment was ovid, three-quarters by one-half an inch in its diameters, and its removal was followed by perfect recovery.

The Modern Treatment of Tuberculous Joint-Disease. (Die moderne Behandlung der Gelenktuberculose. *Archiv für klinische Chirurgie*, 1892, xliv., 3, p. 592.) By Professor König.

The writer has had such an extensive experience in tuberculous disease of the joints, and has always been such a leader in the development of the modern methods of treatment, that his paper upon this subject deserves more than a passing notice. As only one-fifth of the cases of tuberculosis of the joints are without lesions elsewhere, any treatment limited to the joint cannot be called radical. Many of our methods of treatment, moreover, merely cause the disappearance of the symptoms by the encapsulation of the foci of disease in the joint, not by their removal, and yet the results obtained in this way, if the function of the joint is preserved, are better than those obtained by more radical measures, although there may be danger of recurrence. There is then no truly radical treatment.

Very early resections have fallen entirely into disuse. Early cases are to be treated by immobilization with some form of apparatus. If this treatment fails, iodoform or other cicatrizing injections are to be made, and only in case of continued spread of the disease is resection to be resorted to. An approximate idea of the proportions of these different classes is to be obtained by a study of the hip-joint cases in König's clinic. In about four hundred of these cases, one hundred and fifty recovered after treatment for one or two years by extension or plaster-of-Paris apparatus, fifty with injections of iodoform and incision of abscesses, and two hundred and ten were resected. The existence of abscesses and profusely discharging fistulæ is no contraindication to the iodoform treatment, in fact many of these cases recover with greater rapidity than those which are apparently milder. The least promising cases for this method are those with severe bony lesions, and if one could recognize these at once it would simplify the matter very much, but at present we cannot distinguish them in the beginning, consequently a trial of the injection method should be made, and if there is no improvement after four or five injections, operation will be necessary.

In the selection of the form of operation, simple extirpation of the capsule, without removal of bone or with very little curetting, should be reserved for children. Adults require removal of the joint ends as well as the extirpation of the capsule, else some bone lesion may be overlooked. Amputation will still be necessary in some cases, especially when the disease is very extensive, when there is septic infection, or when there is disease of the kidneys or liver.

A Statistical Study of the Mortality from Anæsthetics. (*Centralblatt für Chirurgie,* 1892, Beilage zur No. 32, p. 28.)

Gurlt has continued for another year his collection of statistics for the purpose of studying the relative danger in the use of chloroform, ether, and other anæsthetics, and reported at the last meeting of the German Society of Surgeons on a material of 109,230 cases. There were 94,123 cases of anæsthesia by chloroform, 8431 by ether, 2891 by a mixture containing both, and a few with other drugs. With chloroform there was one death in every 2614 cases, and with ether one in 8431, while there was also one death in the few with the mixture.

The Surgical Treatment of Peritonitis. (Erfahrungen über die chirurgische Behandlung der allgemeinen, eitrigen Bauchfellentzündung. *Archiv für klinische Chirurgie,* 1892, xliv., 3, p. 612.) By Dr. W. Körte.

Körte complains of the results of statistics collected from the literature, and urges surgeons to follow his example, and report complete lists of the cases in which they have operated for general suppurative peritonitis. He publishes nineteen cases treated by him by laparotomy, with six recoveries. The operation discharges the pus, relieves the diaphragm from pressure, sometimes admits of closing the perforation, and allows drainage. The sep-

tic form of peritonitis without exudation and with intestinal paresis does not admit of surgical treatment. Of the other two forms, the general suppurative (septic) peritonitis with or without adhesions, the former gives the best prognosis—all of Körte's recoveries were of this kind. The diagnosis from intestinal obstruction may be impossible, but in either case laparotomy is indicated. As to the time of operation, five cases were operated upon within twenty-four hours of perforation, with three recoveries; six on the second day, six deaths; three on the third day, two recovered; two on the fourth day, one died; three later, all died. A median incision is advised. If adhesions are found irrigation is used, but not if there are none. The operation must be short, therefore lateral drainage-openings are rejected, and no prolonged search should be made for the perforation or other source of infection. Adhesions must not be disturbed. Thick rubber drainage-tubes are inserted in all cavities and wrapped in gauze, and in women it is well to drain through Douglas's cul-de-sac.

An Experimental Research on the Implantation of the Ureters into the Rectum. (*Annals of Surgery*, September, 1892, p. 193.) By Dr. R. H. Reed.

Reed adduces the connection of the ureters with the lower intestinal tract in fowls, and the fact that vesico-rectal fistulæ in man do not generally cause inflammation of the rectum, as reasons for supposing that the rectum can be utilized as a receptacle for the urine when a ureter has been injured in such a way as to necessitate nephrectomy, or when it is desired to relieve the bladder of the presence of that fluid. Accordingly he made twelve experiments on dogs, with the result of demonstrating that in his opinion the unilateral implantation of the ureter into the rectum is possible and practical, but the bilateral operation is still questionable. The presence of the urine in the rectum did not produce pathological irritation.

Can a Septic Bullet Infect a Gunshot Wound? (*New York Medical Journal*, 1892, ii. 458.) By Dr. L. A. Lagarde.

Lagarde has carried out a variety of experiments to determine the question whether it is safe to consider all gunshot wounds aseptic, and reaches the conclusion that the majority of such wounds are aseptic because the majority of cartridges in original packages are free from bacteria, but that the heat developed in the act of firing is not sufficient to sterilize a bullet which originally carried infectious material. His infective material in these experiments was anthrax and dust from the floor of an unswept room.

Spinal Surgery. (Review of cases reported by Schede. *Annals of Surgery*, September, 1892, p. 223.) By Dr. S. Lloyd.

Schede has reported through Rieder in the *Annals of the Hamburg City Hospital* sixteen cases of spinal injury with involvement of the cord. Thirteen were treated conservatively, and all died, except one dorsal case,

which improved. Three were operated upon, with one death, one improved, one unimproved. Schede concludes that operation offers a chance, and that it should be performed as soon as the point of injury can be localized by the symptoms. The ordinary treatment can offer no hope except in cases where there is little or no disturbance of the cord. Lloyd adds that the study of these cases shows that we are still unable to distinguish between those conditions in which the cord is only compressed and those in which it is completely destroyed.

Suture of the Lung. (Un cas de suture du poumon. *Gazette des hôpitaux*, 1892, p. 999.) By Dr. Guermonprez.

Guermonprez performed an Estlander's operation for a case of chronic empyema complicated by a broncho-pleural fistula. He removed six of the lower ribs on the left side, and the fistula was found to be situated lower down than the hilum of the lung, corresponding to the middle of the space between the angle and the head of the rib, and its longest measurement (vertical) was four centimetres. Four sutures were passed, the chief part of the work of holding the lips of the fistula together being done by the central one, passed very deeply into the pulmonary tissue with a curved needle. The closure was successful and the entire wound was healed in thirty-eight days.

Mallein, the New Diagnostic for Glanders. (Editorial article, *British Medical Journal*, 1892, ii. 701.)

Kalning, of Dorpat, discovered recently an extract from the bacillus mallei which could be employed to make the diagnosis of glanders in a manner similar to the use of Koch's tuberculin for tuberculosis, but his unfortunate death from the disease he was studying ended his experiments. Preusse, of Dantzig, independently made similar experiments. In Berlin, Pearson has been investigating the same subject, and others have followed, with the result of confirming the results of the previous workers, so that we may now hope that a reliable and harmless method of discovering glanders in animals before any definite symptoms are to be found has been put in our hands. The importance of such a discovery is also great from its corroborative evidence on the tuberculin question.

Benign Tumors of the Tongue. (*Khirurg. Letopis*, 1892, No. 3; *British Medical Journal*, September 17, 1892, Epitome, p. 46.) By Dr. I. P. Lang.

Lang reports a case of mixed tumor of the tongue (fibro-chondro-osteoma lipomatodes), occurring on the dorsum near the root, in a woman twenty-two years of age, who had been aware of it for twelve years, in which time it had only attained the size of a hazel-nut.

He also reports an adenoma removed from the root of the tongue in a girl thirteen years of age. This tumor was of three years' growth, and had

begun to ulcerate. Both were removed with cocaine, but a sharp hemorrhage occurred in the second case. He states that he could find only one case of each of these tumors on record.

Sarcoma of the Tongue. (Ueber Sarkome der Zunge. *Deutsche medicinische Wochenschrift*, 1892, p. 897.)

Scheier reports a case of sarcoma of the tongue, and adds a *résumé* of the fourteen cases of this rare affection on record. The tumor appears to occur most frequently at the base of the tongue, where carcinoma is rare, and its growth may be slow (eight or even twelve years) or rapid. The tumor may attain a large size. Microscopic examination will be necessary for certainty in diagnosis.

Craniectomy. (*La Semaine médicale*, August 10, 1892.)

Bourneville has studied the skulls of idiots and of children upon whom craniectomy had been performed and finds that there is no trace of synostosis or premature ossification, proving that Lannelongue's theory has no foundation, and therefore craniectomy should be abandoned. He had not found a single case of complete synostosis in an idiotic child. This evidence, coming from a physician of Bourneville's position and experience, is of the greatest importance.

The Urinary Bladder in Herniæ. (Ueber crurale Blasenhernie. *Berliner klinische Wochenschrift*, 1892, p. 741.) By Dr. O. Lanz.

Lanz reports two cases of herniæ containing a portion of the wall of the urinary bladder, and then studies the literature of this variety of herniæ at any of the usual openings. The bladder is most frequently found in inguinal, least frequently in femoral, herniæ, and it appears to have been very rare before the days of frequent operations for the radical cure. The complication is a very difficult one to deal with, especially if the bladder has been incised before it is recognized. It will very seldom be possible to ascertain beforehand whether the hernia contains part of the bladder or not, and even during the operation this may be difficult, for in two cases the fact that no communication could be proven between the general cavity of the bladder and its hernia, even by intravesical injection, led to the error of wounding it. This accident can only be avoided by a careful re-examination of the sac after it has been opened and its neck prepared for ligation, every thickened portion being investigated with this special point in mind. Subserous lipomata are often found near the sac, and they should receive particular attention, for more than once they have been found adherent to the bladder, being apparently the cause of its appearance in the hernial contents. The bladder wall will be found adherent to the sac, being extra-peritoneal, and its presence will necessitate leaving that part of the sac untouched by the ligature and excision.

GENITO-URINARY SURGERY.

IN CHARGE OF WILLIAM K. OTIS, M.D.,
New York.

Gonorrhœa of the Uterus and its Treatment by the Use of the Permanganate of Potassium. (De la Blennorrhagie de la Utérus et de son Traitement par la Permanganate de Potasse. *Ann. d. Mal. d'Org. Genito-Urin.*, January, 1893.) By M. Tixeron.

This article gives a careful clinical account of four cases treated by the use of injections into the uterus of potassium permanganate, varying in strength from one to one thousand to one to five hundred, daily examinations being made of the pus for gonococci, both microscopically and by cultures. Although the number of cases was too small to draw any very definite conclusions, the following observations were made:

In two of the cases, in which the inflammation did not extend beyond the uterus, an exceedingly rapid and definite cure was obtained; but in the other two, where the tubes and peritoneum were infected, the gonococci reappeared immediately after the menstrual period. It is exceedingly difficult to say whether these successive reinfections were caused by the gonococci remaining latent in the uterus, becoming active in a more favorable medium created by the menstrual epoch, or whether the reinfection of the uterus was carried from the tubes. In view of the fact that both the cases uncomplicated by disease of the tubes or ovaries remained free from reinfection, the most plausible theory is that the infection was a descending one. The author believes that even these few cases demonstrate that the permanganate of potassium is in the case of the female, as in the male, a specific against the gonococcus, and that we may therefore hope to obtain by this means the cure of gonorrhœal metritis, a disease which has hitherto remained so rebellious to all forms of treatment.

The Treatment of Bubo: an Excision, and the Attempt to secure Union of the Wound afterwards by First Intention. (*Jour. Cutaneous and Genito-Urinary Diseases*, February, 1893.) By Francis Sedgewick Watson, M.D.

In all operations for the excision of bubo, Dr. Watson carefully observes the following rules:

1. To remove thoroughly all diseased tissue, and to leave, as far as possible, a perfectly healthy surface in every part of the wound. (To secure this it is always necessary to carry the dissection down to the fascia covering the abdominal muscles; sometimes to expose the femoral vessels, and generally the external inguinal ring.)

2. To excise such portions of the skin as threaten to become necrotic or have already become so.

3. To curette the under surface of the skin-flaps.

4. To thoroughly swab the whole wound with dry, sterilized gauze sponges, wet with a solution of corrosive sublimate, one to four thousand.

In performing these operations one or two precautions should be especially observed. These are, to guard against wounding the femoral vessels and the spermatic cord, and to proceed with especial caution when dissecting about the inguinal ring, lest an unsuspected hernia be wounded. In one case Dr. Watson quite unexpectedly came upon a small inguinal hernia upon removing a mass of firmly-adherent inguinal glands that lay upon the outer aspect of the ring, and narrowly escaped wounding the gut. Another matter of importance, and one to which he has seen no reference made, is that of tying as far as possible the ends of all the lymph-vessels which may have been divided during the operation. In many cases these vessels are greatly enlarged, and are necessarily divided. If they are not ligated they may exude a large quantity of fluid into the cavity of the wound, which lifts up the skin-flaps and greatly lessens the chances of securing primary union. The lumen of these vessels was in some instances large enough to admit an ordinary small-sized probe; they ramify throughout the mass of diseased glands, and are intimately connected with them. They closely resemble cutaneous nerve-branches, but are readily distinguished from them, in that they have a distinct lumen from which a clear fluid exudes, and are of a more yellowish color and present a duller surface.

Operation for Undescended Testicle. (*Medical Week*, Friday, January 13, 1893.) By Mr. Leonard A. Bidwell.

After discussing the reasons that had led surgeons generally to remove undescended testicles, Mr. Bidwell pointed out that with the methods of treatment at present in vogue the testicle, when left, rarely descends lower than the root of the penis. He suggested the following modification of the present procedure: The incision is the same as for the radical cure of hernia. The testicle is, if possible, squeezed out of the inguinal canal, the extrusion being facilitated, if necessary, by the division of the fibres of the external oblique. The tunica vaginalis is then opened and divided just above the testicle. If a hernia be present the upper end of the tunica vaginalis is dissected up and, after being ligatured at the internal ring, is cut off. The fibres of the cremaster are cut across and the testicle is pulled away from the cord; the structures between the vas and the epididymis are carefully divided with the point of the knife, and in this way the testicle is inverted, the vas entering at the top, instead of the bottom, of the epididymis. The vestigial remains around the top of the normal testicle are now below. In doing this the spermatic artery and vein are cut across and ligatured, but the artery of the vas is carefully preserved. When this has been done the testicle hangs about one and one-half inches lower. A finger is then thrust down to the bottom of the scrotum, and a mounted darning-needle, armed with a silken thread, is passed through the dartos in contact with the finger. The thread is withdrawn from the eye of the needle, which is then

passed through the vestigial remains at the bottom of the inverted testicle. The needle is then threaded afresh, and made to leave through the original puncture. The inguinal canal having been closed by the method of Macewen, the divided fibres of the external oblique and the skin wound are united by a continuous suture. The two ends of the silk thread attached to the lower part of the testis are knotted outside the scrotum, and are attached by means of a piece of elastic drainage-tube and a safety-pin to the cross-bar of a wire cage specially adapted for this purpose. The cage is fastened to the body by tapes, and, though firmly held in position, causes no discomfort to the patient. The wound is dressed with cyanide gauze, and the whole cage enveloped in an antiseptic dressing. The elastic tube is tightened, if necessary, after two or three days, and the cage is kept on for at least a week or ten days, when the thread may be withdrawn from the scrotum.

ORTHOPÆDICS.

IN CHARGE OF REGINALD H. SAYRE, M.D.,
Assistant to the Chair of Orthopædic Surgery, Bellevue Hospital Medical College, New York.

A Case of Congenital Dislocation of the Hip. (Un Cas de Luxation coxo-fémorale congénitale. Par P. Cantru. *Revue d'Orthopédie*, November, 1892.)—The infant described in this article died a few hours after birth. The specimen is to be seen in the museum of the maternity at the St. Louis Hospital, Paris. There was nothing remarkable in the pregnancy. Labor normal, head presenting. The child was the third. The two elder children were well formed. This child had double equino-varus. The glenoid fossæ were both abnormally small, that on the left shoulder especially so, but not sufficient to cause a complete luxation. The heads of both radii were luxated forward. The right hip was normal; the left had practically no acetabulum at all. There was a long ligamentum teres. The head of the femur was markedly atrophied; congenital subluxation was unquestionable. The pelvis was misshapen. The ischium on the side of the luxation was carried too far backward; the ischio-pubic ramus on this side measured fourteen millimetres. The sound side measured eleven millimetres. The whole pelvis was canted forward, the axis of the superior strait making a greater angle with the vertebral column than normal. The symphysis was slightly towards the sound side.

Lateral Deviations of the Spine in Pott's Disease may simulate Scoliosis. (Des Déviations latérales du Rachis dans le Mal de Pott peuvent simuler le Scoliose. Par E. Kermison. *Revue d'Orthopédie*, November, 1892.)—The author has found about one-fifth of his cases of Pott's disease present lateral deviations of the spine. He divides these

into two classes,—those where there is a knuckle and also an inclination of the trunk to one side, and those where there is no knuckle and the lateral deviation resembles very closely the rotation of lateral curvature. This second variety is the important one, as it may be mistaken for lateral curvature; while in those cases where a knuckle is present the lateral deviation is simply an interesting fact to be noted, but which has no direct bearing on the case. In several of the cases described under the second head, the diagnosis was in doubt for some weeks, and even months. In this same connection should be mentioned the paper by Dr. John Ridlon, on "Lateral Deformity in Pott's Disease" (*Medical Record*, September 17, 1892), in which he describes, with illustrations, two cases which were treated as lateral curvature by men of experience, and which proved later on to be cases of Pott's disease. For those interested in this subject we would refer to the papers by Bartow, "The Presence of Spinal Distortion in the Early Stages of Spondylitis and its Value as a Diagnostic Sign" (*Annals of Surgery*, 1889, p. 48), H. Ling Taylor, "A Case of Pott's Disease with an Unusual Deformity" (*Transactions of American Orthopædic Association*, vol. i. p. 38), and Robert Lovett, "Lateral Deviation of the Spine as a Diagnostic Symptom in Pott's Disease" (ibid., vol. iii. p. 182, and vol. iv. p. 38).

Operative Treatment of Congenital Dislocation of the Hip. (Operative Therapie der angeborenen Hüftverrenkung. *Centralblatt für Chirurgie*, August 6, 1892.) By Dr. Adolf Lorenz, Vienna.

The author, having found difficulty in following out Hoffa's method of operation in this class of cases, advocates subcutaneous tenotomy of the adductors and hamstring muscles at their insertion into the tuber ischii, and also the rectus femoris and tensor vaginæ femoris, as he thinks these are concerned in the prevention of the reduction of the deformity, rather than those muscles which pass from the pelvis to be inserted into the great trochanter. Instead of making his incision behind the trochanter, as Hoffa does, he cuts down upon the joint, making an anterior incision. In some cases he has found it practicable to replace the head of the femur in the acetabulum without opening the capsule. In other cases the capsule is opened and the acetabulum enlarged sufficiently to contain the head of the femur. The wound is sewed up, the leg placed in a position of abduction and fastened there. He has operated in four cases with good success, although too short a time had elapsed since the operation at the time the cases were reported to speak positively as to the permanence of the cure.

Operative Treatment of Congenital and other Dislocations of the Hip. (Die Operative Behandlung der angeborenen und anderer Hüftverrenkungen. *Ibid.*, September 10, 1892.) By Dr. Karewski, Berlin.

The author, in commenting on Dr. Lorenz's article, just mentioned, says that too short a time had elapsed since the operation on his cases to allow judgment to be formed as to the ultimate success of this mode of treatment.

He himself has operated on a number of cases in which more than a year has elapsed, which consist of five of congenital luxation, one of spontaneous luxation after scarlet fever, and eight caused by paralysis. In February, 1889, he operated upon two cases, one of which required simply the cutting of the contracted muscles, and in the other it was necessary to open the joint in order to replace the head of the bone in its acetabulum. In this case he operated by Hüter's incision, which is practically that used by Lorenz. In this case he found that it was not only the shortening of the muscles, but of the other tissues, and the contracture of the lateral part of the capsule of the hip-joint and ilio-femoral ligament, which hindered reposition. He claims that this is the first case of perfect cure by operative interference in congenital dislocation of the hip. This case was one of infra-pubic dislocation, which he thinks much easier to cure than dislocations on the dorsum of the ilium. In those cases where there is little depth to the acetabulum, he thinks König's method of forming a periosteal flap for the purpose of deepening the cavity is very essential, and as this cannot be done except through a posterior incision, he prefers the latter.

Lesions of the Spinal Cord in the Scoliosis of Infancy. (Des Lesions de la Moelle dans la Scoliose de l'Enfance. *Bulletin de la Société Anatomique*, September 20, 1891.) By Dr. Klippel.

The author has found, three times, in cases of scoliosis dating from infancy, lesions of the spinal cord, which consisted in atrophy of one of the anterior horns which was visible to the naked eye. The atrophied horn had a triangular form, the point of the triangle being in front. The lesion, in two cases, was present throughout the entire length of the dorsal portion of the cord, and in one case could be followed into the cervical region, where it had the same characteristics. The muscles of the thorax corresponding to the atrophied side of the cord were, in one case, in a very advanced condition of degeneration. The ribs and vertebræ participated in this atrophic lesion. There is no doubt that there was a relation of cause and effect between these peripheral lesions and those of the spinal centres. The question is, first, was the lesion of the spine consecutive to those observed in the thoracic muscles, the ribs, and the vertebræ? In this case there must have been an arrest of development. Second, was the lesion of the cord primitive, and a cause, therefore, of the atrophy of the muscles and bone? The author thinks the last hypothesis is probable, because we know a number of cord-diseases (hereditary ataxy, syringomyelia, infantile paralysis, progressive muscular atrophy, Morvan's disease), sometimes present scoliosis as one of their symptoms. We can, with justice, therefore, suppose that a lesion of the cord taking place during intra-uterine life, or very shortly after birth, may produce certain kinds of lateral curvature in infancy which do not fall under the head of rickets, as the symptoms of the latter are absent, and which ought to be called "myelopathic scoliosis of infancy."

It may be asked if these scolioses are not due to infantile paralysis, and

bear the same relation to it as do certain club-feet. If this is so, the second observation would establish the fact that an infantile paralysis may exhibit scoliosis as its only symptom. The lesion which was found, however, does not exactly correspond to that of infantile paralysis. It is really an atrophy, remarkably regular, extending from the lumbar to the cervical spine, without a break. This is one of the reasons which makes the author admit the possibility of its being an arrest of development. Whichever opinion is correct, it is certain, however, that certain cases of infantile scoliosis present characteristic lesions of the spinal cord at autopsy.

Vertebral Surgery, with a Report of Three Cases, and a New Method of Operating in the Dorsal Region. (*Jour. American Med. Association*, December 19, 1891.) By F. C. Shaefer, M.D.

The author reports three cases of spondylitis with abscess, one cervical, one lumbar, and one sacral, which he incised and curetted. He holds that these abscesses should be reached by the shortest practicable route, curetted and drained. In pressure paralysis he thinks this method preferable to laminectomy, as the origin of the disease cannot be easily removed by the latter operation, and it tends to diminish the support of the spine, which is already weakened by the destruction of the anterior part of the bodies of the vertebræ. He advocates following up the sinus in the cervical region, or cutting down on the vertebræ by an incision behind the sterno-mastoid, or opening through the pharynx *via* the mouth. In the lumbar region, an incision over the transverse processes through the superficial tissues and along the border of the multifidus spinæ muscles, one and one-fourth inches from the spinous processes, enables one to get behind the psoas muscle, to the vertebral body. The sacral body can be reached *via* the triangle between the transverse process of the fifth lumbar vertebra and the base of the sacrum, also through the great sciatic notch; through or back of the rectum, or by trephining through the bone from behind. In the dorsal region, the space between the tranverse processes is so narrow as to preclude the possibility of thorough treatment; Shaefer, therefore, incises the soft tissues one inch from the spinous processes, uncovers and removes the transverse process of the diseased bone, or of the one just below it, and resects the head and neck of the corresponding rib. This permits a large finger to reach the postero-lateral angle of the diseased body, and gives room for the introduction of the curette, sharp spoon, or forceps, and leaves a large space for the drainage-tube. Should it be desirable to carry the drainage-tube through the column, a transverse process with the end of the rib of the opposite side can also be removed, when it can readily be passed through. In doing this operation we must avoid the pleura, dorsal ganglia of the sympathetic, spinal nerves, and intercostal arteries. One can hardly avoid injuring the artery. The other tissues need not be damaged. Hemorrhage can be controlled. The difficult part of the operation is in disarticulating the head of the rib, as it is deeply placed and firmly attached. To avoid

injuring the pleura and the ganglia of the sympathetic, it is a good plan, after sawing through (chiselling or cutting with bone-forceps) the rib at its tuberosity, to strip off the periosteum in front of the neck and head of the rib. The transverse process is removed with a chisel. The disarticulation of the rib can be done with scissors or knife by following the attachments of the ligaments about the neck and head of the rib. The operation is practicable; less formidable than laminectomy; and the latter operation involves more cutting. The spinal supports are not so much weakened, and the spinal canal is not opened, unless the back portion of the vertebral body is destroyed. Even then the posterior common ligament may protect the canal. Of course it is to be understood that the operation is not intended to take the place of laminectomy in cases of great angular curvature, but to be resorted to before the disease has produced any great deformity, as soon as an abscess has been discovered.

OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF JOHN M. KEATING, M.D., LL.D.,

Colorado Springs, Colorado; Fellow of College of Physicians of Philadelphia; Gynæcologist (Emeritus) to St. Agnes's Hospital, Philadelphia; formerly Visiting Obstetrician to the Philadelphia Hospital (Blockley); Editor "Cyclopædia of the Diseases of Children," etc.

The Tampon in Menorrhagia. (*American Journal of the Medical Sciences*, January, 1893.) By W. T. Lusk, M.D.—In this paper the author considers the treatment of that form of menorrhagia which is not due to inflammatory thickening of the endometrium, but due to displacements, neoplasms, obstructions to the cervical canal, connective-tissue changes in the uterine walls, imperfect involution or retention of portions of the ovum, and where nothing seems to be left to do but to remove the tubes and ovaries. In this case he has adopted the plan originally recommended by Marion Sims, which is as follows: He advised, as material for a tampon, wads of cotton of suitable size soaked in carbolized water and compressed into the form of flattened disks. These, by means of a Sims speculum, should be applied firmly to the vault of the vagina. It is important that they should be placed with the flattened surface in a transverse direction, rather than in one parallel to the vagina, and that the packing should be arrested at the urethro-vaginal septum. At the end of twenty-four hours the tampon should be removed, the vagina should be irrigated, and a fresh tampon should be introduced. When thus employed for forty-eight hours, the flow is usually ended. In rarer cases a third application of the tampon may be called for.

Amenorrhœa, Treatment of, by Intra-Uterine Electrization. (*Gazette de Gynécologie, Archives of Gynæcology*, November, 1892.) By Dr. Ahitot.—In the treatment of functional amenorrhœa, this author speaks of

the value of electricity. His method is as follows: After being assured by a careful examination that pregnancy does not exist, a large electrode of felt, moistened by salt water, is applied to the abdomen and connected with the positive pole of a constant current. The negative pole, connected with a metallic sound, carefully isolated from the vaginal parts, is introduced into the uterus to the fundus, after careful antisepsis of the vagina and cervical canal. Thirty or forty milliampères are employed for five or six minutes.

Metrorrhagia. (*Providence Medical Journal; Medical and Surgical Reporter; Archives of Gynæcology*, November, 1892.)—Sulphate of atropine is advised in those cases that have resisted the treatment by ergot, hydrastis, tampons, ice, etc. The one-two-hundredth of a grain is given twice or thrice daily by hypodermatic injection. [This method has been recently strongly advocated for pulmonary hemorrhages, and there is reason to believe that it would be of value in these cases also.—Rev.]

Cysts of the Vagina. (*Annales de Gynécologie*, July, 1892; *Archives of Gynæcology*, November, 1892.)—V. Charlot distinguishes several distinct varieties of these cysts: *first*, glandular cysts; *second*, lympathic cysts, lined wih endtothelium; *third*, hygromas and large bursæ, developed by injury; *fourth*, sero-cysts, developed in spaces produced by detachment of the coats of the vagina during parturition; *fifth*, cysts developed from hæmatoma; *sixth*, Müllerian cysts, or lateral hæmatocolpos, pyocolpos, or muco-colpos, developed from the lower part of one of Müller's ducts; *seventh*, para-vaginal hydatids; *eighth*, cysts developed from the Wolffian ducts.

Laparectomy (Cœliotomy?) for a Very Large Ovarian Cyst. (Acad. of Med., Paris, January 10, 1893. From *The Medical Week*, Paris, January 13, 1893.)—Dr. Maritan (Marseilles) showed a woman on whom he operated for a very large ovarian cyst. Before the operation the patient weighed over fourteen stone, and her abdomen measured close on eighty inches in circumference. She had been tapped twenty-three times, and a total of fifteen hundred pints of fluid had been drawn off. The cyst was very firmly adherent to the anterior abdominal wall, from which it could not be separated, and a portion of the wall had to be removed therewith. Behind, the cyst was only adherent to the omentum. The cyst contained about one hundred and five pints of a greenish-yellow fluid, and the cavity was filled with thousands of parasitic cysts. The tumor weighed thirty pounds and ten ounces. The stitches were removed on the eighth day, and, after a somewhat protracted convalescence, the patient at last made a complete recovery. She is now perfectly well.

Treatment of Complete Prolapse of the Uterus. (*Boston Medical and Surgical Journal*, December 29, 1892.) By J. C. Irish.—The author favors vaginal hysterectomy for complete procidentia, for the follow-

ing reasons: first, it is the easiest operation to perform; second, it always cures, which Hegar's operation frequently, and ventral fixation occasionally, fail to do; third, it is attended with very small danger to life,—less than in the case of abdominal hysterectomy, or in ventral fixation; fourth, it is probable that the after-condition of the patient will be more surely satisfactory than when one of the other operations, except abdominal hysterectomy, is selected.

The Sequel in Three Cases of Vaginal Hysterectomy. (London Obstetrical Society, January 3, 1893. From *The Medical Week*, January 13, 1893.)—Dr. Cullingworth gave the subsequent history of the three patients whose cases were given in the author's paper on "Vaginal Hysterectomy," read April 2, 1890, and who survived the operation. Of these, one lived for two years and two months, one for a few days short of two years, and the third for a little over seventeen months. Two enjoyed perfect health until within a few weeks of their death. In each of these cases death resulted from intestinal obstruction, the cause of which in one case remains unknown; in the other it was pelvic adhesions, the only sign of recurrence being a single enlarged gland and a small ulcer in the vaginal roof. In the third case the history showed restoration to fairly good health for six or eight months, then gradual failure for twelve months, and, finally, six months of absolute confinement to bed, death occurring from kidney-disease, due apparently to implication of the bladder and ureters in the recurrent growth. The patients with columnar-celled carcinoma lived longer than the one in whom the disease was of the squamous-celled variety. Dr. Playfair observed that the value of observations of this kind would be greatly enhanced if all operators took the trouble to furnish the subsequent history of their patients, since by this means alone would one be enabled to determine the relative value of the different procedures. He himself had performed a goodly number of supra-vaginal amputations, but in no single instance had the operation been followed by complete immunity from recurrence, though in one case there had been no recurrence for five, and in another for three, years. He pointed out that the mortality of total hysterectomy was gradually being reduced, and if it could be made to approximate that of supra-vaginal amputation no reasonable person could entertain a doubt as to which would be the preferable operation. The principle that impelled the surgeon elsewhere to remove as much as possible of the diseased organ held good in respect of the uterus. He declined to admit the teaching of Dr. John Williams that squamous disease of the cervix was an affection so strictly limited to the cervix as to make supra-vaginal amputation a safe operation, so far as recurrence was concerned. He showed the uterus of a woman who had malignant disease of the cervix. The body of the uterus appeared healthy on macroscopic examination, but under the microscope infarcts of disease could be detected far away from the seat of obvious disease, so that

in this case any operation short of total extirpation must necessarily have proved useless. He also showed a uterus, the body of which was the seat of cancer. The patient had been sent to him from Germany, and when first seen the uterus was perfectly mobile, but, from the situation of the disease, he advised total removal of the organ. This was declined, and when she returned a month later the disease had made very great progress. In spite of the intrinsic difficulties of the operation in a woman with an undilated, virgin vagina, he consented to attempt the removal *per vaginam*. Owing to the extreme friability of the uterine tissue, however, he was quite unable to effect the removal *per vaginam*, and, ultimately, he was obliged to complete the removal by means of a supra-pubic incision. They had had two other cases in the hospital, followed by recovery, during the year. He thought that, under any circumstances, however, either operation would be undertaken for the purpose of prolonging life, rather than with the hope of averting recurrence.

The Frequency of Local Symptoms of Uterine Displacements. (London Obstetrical Society, January 4, 1893. From *The Medical Week*, Paris, January 13, 1893.)—Dr. Herman gave the results of some four hundred and seven observations made by him with the object of determining the relative frequency of the local symptoms associated with retroflexion or retroversion of the uterus. He discussed the two displacements together, no great importance attaching, in his opinion, to the distinction between them. He found that *chronic pain* of some kind was present in nine-tenths of the cases of backward displacement of the uterus. The most frequent seat of pain was the back, generally the sacral region. Next most often came sensations of descent and unilateral pains, mostly in the ovarian region, cases of left-sided pain outnumbering those of right-sided pain in the proportion of three to one. In a small proportion lower abdominal pain was the chief complaint, and in a very small minority trouble in locomotion was the prominent symptom. *Pain in defecation* was present in less than half the cases. In the majority of the cases in which it was present it was accounted for either by constipation or by morbid conditions of the rectum. The author estimated the proportion of cases of backward displacement of the uterus in which the displacement is the sole cause of painful defecation at about one in nine. Backward displacement of the uterus has no appreciable effect as a cause of painful *micturition;* but *bladder irritation*, due solely to the displacement, was present in about one case in five. *Leucorrhœa* was not commoner in cases of backward displacement of the uterus than among other patients. *Dyspareunia* was present in at least one-sixth, and probably in a larger number; absent in at least one-seventh. Dr. Rasch pointed out that the whole paper turned on the question of diagnosis, and he asked whether in every instance this had been clearly made out, and whether the cases were uncomplicated by other affections. Dr. Handfield-Jones pointed out that one would expect the symptoms due to an affection of the

uterus to be referred to the median line. Under similar circumstances he had remarked pain referred to the synchondroses, which was relieved by blistering.

Dr. Champneys observed that the left side in women appeared to exhibit a greater liability to pain than the right side. As the non-pregnant uterus only weighed about an ounce, and *in situ* even less, it was impossible to believe that it could exert pressure on neighboring organs sufficient to determine pain. Moreover, many of the symptoms said to be associated with the minor displacements did not occur in the major displacements, descent, etc. He pointed out that a bearing-down effort did not tend to increase these displacements, but rather the contrary. The condition of catarrh was frequently indicative of descent of the uterus. In respect of dyspareunia, he pointed out that the uterus might press on a distant diseased organ and so give rise to pain, which appeared to be due to pressure on the uterus itself. Dr. Gervis dissented from the view that retroflexion and retroversion could not exist without descent of the uterus, though when no descent was present the symptoms were usually not marked. In other words, it was the descent that gave rise to the characteristic symptoms. He raised the question as to what share of the symptoms was due to concomitant ovarian mischief. He remarked that in a number of cases of sterility he had found some displacement of the uterus. It was notorious that in many instances displacement of the uterus existed without giving rise to any symptoms, and he asked what were the factors that determined the symptoms when they existed. He suggested that the cases free from symptoms were those in which the cervical canal was free, and that when they occurred it was due to an obstacle to the discharge of the menstrual or other flow. In some cases congestion of the uterus from the flexion appeared to be the source of the pain, etc., causing endometritis, salpingitis, etc. Dr. Champneys explained that he did not wish it to be understood that these displacements never existed without descent. Dr. Herman, in reply, said that none of the cases were uncomplicated, for the simple reason that in uncomplicated cases there were no symptoms. Displacements of the uterus were known to be associated with a certain train of symptoms, but he was disposed to think that the association was often of the nature of a coincidence. It was held by many that, *per se*, displacements of the uterus were without importance, and it was with the object of determining as far as possible the constancy of these symptoms that he had undertaken these researches.

A Case of Ischio-Pubiotomy: Farabeuf's Operation. (Academy of Medicine, Paris, January 10, 1893. From *The Medical Week*, Paris, January 13, 1893.)—Professor Pinard shows a woman with an obliquely-contracted pelvis associated with synostosis or ankylosis of the right sacro-iliac synchondrosis, on whom he was led to perform a new operation,—viz., ischio-pubiotomy. She had previously had five children, all of whom had been extracted by artificial means. As a result, four of the children were

still-born, and the fifth, who was born partially asphyxiated, only lived for five months. This, therefore, was her sixth pregnancy. She came to the Baudelocque Hospital for her confinement, "begging for a live child at any cost." In order to obtain this object without endangering the mother's life, Professor Pinard decided to perform the operation of ischio-pubiotomy on the lines indicated by Professor Farabeuf. The operation was performed a few hours after the appearance of the first pains. It consisted in sawing through the horizontal and descending rami of the pubes, at a distance of two inches from the symphysis, on the ankylosed side. Tarnier's forceps were then applied to the head at the inlet, and a living child, weighing about eight pounds, was extracted without the slightest difficulty. The operation itself presented comparatively little difficulty. The most troublesome part consisted in passing the chain-saw around the horizontal ramus of the pubes. Immediately after the operation the pelvic diameter was increased by one inch, and this must have been brought to about two inches by the passage of the head. It was found unnecessary to wire the bones together, for they had fallen back into their natural position and the divided ends were in contact with one another. The wound was closed and the woman laid on the special bed for symphyseotomy cases. The results of the operation were very satisfactory. The wound in the soft parts healed by first intention, and the patient is now able to walk as well as she did before. She nurses her child, who now weighs about eleven pounds.

OPHTHALMOLOGY AND OTOLOGY.

IN CHARGE OF J. E. HARPER, A.M., M.D.,
Chicago, Illinois.

Massage in Corneal Affections.—In the *Northwestern Lancet*, October, 1892, Dr. J. W. Thompson describes his method of using massage as follows:

"I use the tip of my index finger and apply it to the centre of the upper lid, tolerably near the edge, and in about the same location on the lower lid, and thus employ the lid itself with which to produce the friction upon that part of the globe I wish to massage. The motion must be rapid, and the pressure regulated in accordance with the effect designed to be produced. There are two directions of the movement to be employed,—radial and circular. I use the former oftener than the latter, and prefer it for three reasons: 1. It is applicable to a greater number of cases. 2. It enables me to apply the remedy to a special section of the globe. 3. The engorged vessels run more frequently in this direction, and consequently their contents are more freely acted upon. At the first two or three sittings I do not employ much pressure, but later on I increase it as the exigencies of the

case may demand. The length of time that I employ it at each sitting is also regulated in accordance with the demands of the case. This varies from one minute to five minutes. I use a fresh section of the globe at each sitting, and, when the case will tolerate it, I give the patient two sittings daily. The finger must be made to apply itself as evenly as possible to the globe,—*i.e.*, the direction of the motion must be changed so that it is made to follow as evenly as possible the curvature of the globe. Experience has taught me that it requires a considerable amount of practice to become expert in this manipulation. I practise it with much care and precision. I use the circular motion in the region of the sclero-corneal junction. Some cases will not tolerate a treatment oftener than every alternate day, while others will bear even three treatments each day. The remedy is a very active one, and my experience with it has taught me that one must exercise his best judgment in its application. In short, like all other remedies, it must be adapted to the exigencies of the case. Those who have had no experience with this treatment as applied to the eye will be surprised, perhaps, to witness its powerful effect when actively and properly applied."

Foreign Bodies in the Cornea.—Dr. Edward Jackson (*Times and Register*, October 29, 1892) suggests that "an excellent method of searching for the foreign body, and one that has the advantage of being available during its removal, is to look for the interruption that it causes in the reflex obtained from the corneal surface. To do this, place the patient facing the window with a large open sky space, while the surgeon takes his position so as to obtain the reflection of the sky space from the surface of the cornea; a very good position being to stand behind the patient, looking down on the cornea. The patient's eye is then turned from point to point, so that the reflection is obtained from all parts of the cornea in succession. If the window with clear sky space is not obtainable, a piece of plain white paper or card-board, strongly illuminated, and held close in front of the eye to be examined, will furnish the required reflex from the corneal surface. The essentials are that the reflex shall be bright, uniform, and large enough to enable the observer to go rapidly over the whole cornea without missing any part of it."

He concludes his article with the following: "There is a special form of foreign body for which I have resorted to the electro-cautery,—namely, grains of gunpowder,—which have proven, when the attempt was made to extract them in the method of ordinary foreign bodies, to be so intimately associated with the adjoining corneal tissue as to render it impracticable to extract them in the ordinary way without too much abstraction of tissue.

"In the case of the patient shown this evening there were three such grains in the left cornea, remaining after others were removed without difficulty from both corneas. These deeply-imbedded and diffused grains were touched with a pointed electrode, and thus destroyed with the least possible damage to the surrounding tissues. The same method was applied

to some of the grains that had been at the same time imbedded in the lids, brow, and cheeks, with the very satisfactory results shown."

The Use of the Galvanic Cautery in Ophthalmic Surgery.—Dr. Robert D. Gibson (*Lancet-Clinic*, October 29, 1892) expresses the following opinions:

"The value of the actual cautery in ulcerations of the cornea can scarcely be overestimated. If properly used, the cauterization need not extend beyond the border of the ulcer to any perceptible degree, and, in place of an infected ulcer to deal with, we have a sterilized healthy surface which rarely refuses to heal promptly, if treated with strict antiseptic precautions. The cicatrix will always be perceptible, but not more so than would that of the ulcer be if arrested by some other means. All other means generally fail, whereas the cautery rarely fails. Therefore we have to choose between an uncertainty and a comparative certainty. If the resulting opacity be central, it can be overcome by an iridectomy at some favorable point.

"In cases requiring paracentesis of the cornea, the cautery presents certain claims over the needle: (1) there is less danger of infection, and (2) the opening does not heal so readily, permitting a longer period of drainage. This latter claim would indicate that it might be used to advantage in some cases of glaucoma. I do not know of it having been tried.

"The writer has treated keratoconus by performing paracentesis of the cornea with the galvano-cautery needle, and obtained very encouraging results. In one case where the vision was reduced to perception of light, the vision was increased to $\frac{20}{50}$, and in another case, in which the vision was reduced to $\frac{4}{200}$, the vision was increased by this procedure to $\frac{20}{50}$."

Influence of Tobacco on Vision.—In an article under this head (*Lancet-Clinic*, October 29, 1892) Dr. Francis Dowling reports the case of a woman, aged forty, who was suffering from tobacco amblyopia. She confounded red and green with black, and white with dark gray. Visual acuteness was much diminished. She said her sight had been failing for two years. She had been working in tobacco for five or six years, but had never used it in any form. The author believed the trouble to be hereditary. Another of the cases reported was that of a boy, nineteen years of age, who was an inveterate chewer and smoker. None of the remaining cases presented unusual characteristics.

Acute Inflammatory Earache.—The *New York Medical Journal*, October 29, 1892, gives the following abstract of a paper, bearing this title, read by Dr. J. H. Claiborne at the meeting of the Medical Society of Virginia:

"He alluded altogether to cases of acute catarrhal otitis media, such as were caused by the causes of acute colds in general. He did not approve of opening the drum of the ear, unless it was done by an expert.

He recommended instead the use of the Eustachian catheter and gradual long-continued inflations three or four times every few hours to empty the middle ear. He did not apply silver nitrate in acute cases, but in subacute cases he applied a four-per-cent. solution of this salt. Sometimes Dobell's solution sprayed into the nose and throat acted well. He placed his confidence in the following plan of treatment:

"1. Hot ten-per-cent. solutions of cocaine instilled into the outer ear, retained from five to ten minutes. 2. Hot solutions of boric acid instilled into the outer ear, while spongio-piline soaked in hot water was applied over the whole ear-surface. Hot salts might be used. 3. Inflation by the bag and by the continuous method with the Eustachian catheter. 4. The administration of a drastic dose of Epsom salts.

"After the acute stage was passed, blisters behind the ear might be useful, but they did no good during the acute stage."

DISEASES OF THE LARYNX, NOSE, AND SURROUNDING STRUCTURES.

IN CHARGE OF J. PAYSON CLARK, M.D.,

Physician to the Throat Department of the Boston Dispensary; Assistant Physician for Diseases of the Throat, Massachusetts General Hospital.

Spasmodic Aphonia and Dyspnœa. (*Revue de Laryngol., d'Otol.*, etc., August 1, 1892.)—According to Dr. A. Onodi there are only two previous complete observations of this affection recorded, one by Michaël, the other by Krause. In the first case the dyspnœa disappeared under chloroform, and in the period of excitement the voice became clear. On removing the chloroform the previous condition returned. After the failure of all other treatment tracheotomy was performed. Three years later the functional troubles of the vocal cords remained, and the canula could not be dispensed with. In Krause's case spraying with a ten per cent. solution of cocaine relieved the condition and resulted in a cure.

The writer's case was a young hysterical woman, subject to attacks of hystero-epilepsy and also of inspiratory dyspnœa and complete aphonia. Inhalations of ether gave temporary relief. Hypnotism was employed with complete success.

A New Symptom of Laryngeal Paralysis. (*Revue de Laryngol., d'Otol.*, etc., July 1, 1892.)

This symptom consists of a peculiar, when once perceived, unmistakable alliaceous odor of the breath. It has been observed since 1872 by Dr. Ch. Fauvel, in the majority of patients affected with a paralysis of laryngeal muscles, and he has been able since then to collect fifty very conclusive observations. It is a symptom of no great use to specialists, but to practi-

tioners unfamiliar with the use of the laryngoscopic mirror it is capable of rendering service by causing them to suspect laryngeal paralysis. It is a constant symptom in cases which have lasted some time.

The writer has been unable, after the most careful research, to find any other lesion which gives this characteristic odor to the breath. The odor is unperceived by the patient. The explanation suggested for its production is that, owing to the muscular paralysis, the mucous secretions remain on the laryngeal surface, and in the ventricular cavity of the affected side, and, as they dry, give forth the products of decomposition.

Chancre of the Mouth. (*Medical Record*, October 1, 1892.)—Dr. E. H. Griffin, among twelve hundred cases of syphilis that have come under his observation, found twelve in which the primary lesion was situated in the mouth. Three of the cases belong to one series. A boy, nine years of age, developed a chancre of the lower lip, probably contracted from drinking out of a pail belonging to some laborers. Three weeks later a brother, aged twelve, developed a primary sore on the right tonsil from having put a stick of candy into his mouth which the other boy had sucked. Two weeks later the sister, aged fifteen, developed a sore on the upper lip from having kissed her brother. Of the other cases five were chancres of the lip from kissing, one chancre of tongue from same cause, one chancre of the tonsil in a boy of eight from impure practice, one chancre of upper lip from drinking out of the same bottle with a man having a syphilitic sore mouth, one chancre of the lip in an actress from using the rouge belonging to an infected companion.

Speaking of the occupation of those having syphilis, the writer says that "a law should be passed making the examination of the buccal cavity compulsory in all factories where the article of manufacture is liable to carry any syphilitic poison. This examination could be made at certain intervals, and the spread of the disease curtailed."

Study of Empyema of the Frontal Sinuses. (*Revue de Laryngol., d'Otol., etc.*, October 1, 1892.)—According to Dr. Bercheu, the causes of empyema of the frontal sinus are local (foreign bodies, chronic inflammations of the nasal fossæ, polypi of the middle meatus, osteitis of the frontal of traumatic or diathetic origin), or general (typhoid fever, erysipelas, variola, measles, scarlet fever). The symptoms are pain, deformity, existence of fistula seated at the border of the orbit, generally at the inner side. The diagnosis is not always easy. Empyema of the frontal sinus has often been confounded with a simple migraine, a neuralgia, a phlegmon of the orbit, a gumma, an abscess of the lachrymal sac, finally with an osteoperiostitis of syphilitic or tubercular origin. The course is slow and cure difficult. Palliative treatment has little effect. It is generally necessary to have recourse to surgical intervention, which consists in evacuating the purulent collection, draining the cavity, and modifying the mucous

membrane in order to dry up the secretion. The best method of treatment consists in the subperiosteal removal of all the anterior wall of the sinus and in fronto-nasal catheterization with Dr. Panas's catheter.

The Sense of Smell. (*Lancet*, October 8, 1892.)—Professor Jashow communicates, in a recent number of the *American Journal of Psychology*, the results of his observations made on a student, twenty-one years of age, suffering from congenital complete anosmia. Taste as well as common and thermal sensibility were undisturbed. The investigation showed that the greater number of taste perceptions, as they are ordinarily understood, are to be referred to smell. No distinction could be made between tea, coffee, and hot water. The patient discriminated ether and water, the former producing in his throat the sensation of peppermint. Ammonia and ether were distinguished six times in eight (two errors from fatigue). Various fruit syrups were not distinguished, but only recognized as sweet. Mustard gave a sharp sensation on the tongue and was not recognized any more than pepper. Cloves and cinnamon were distinguished.

Primary Tuberculosis of the Pharynx. (*Revue de Laryngol., d'Otol., etc.*, October 1, 1892.)—Dr. Jullien reports the case of a woman who presented three ulcerations with a yellowish base situated in the pharyngeal region, the largest about the size of a silver ten-cent piece. They were not painful. A scraping from them was found to be rich in tubercle bacilli. The woman, who was a prostitute, had had for six months frequent intercourse with a phthisical man. Her lungs were apparently sound. She had five brothers in good health, but could give no information regarding her parents.

Strong Hydrogen Peroxide Solutions locally in Diphtheria. (*Boston Medical and Surgical Journal*, September 29, 1892.)—Dr. Francis H. Williams gives the results of his experiments with this non-poisonous germicide in diphtheria. Peroxide of hydrogen in the ordinary fifteen-volume (2.4 per cent.) solution is not strong enough to kill the bacilli promptly. A fifty-volume (8 per cent.) acid solution was used by the writer. This solution does no harm to the tissues, and, as a rule, causes little inconvenience to the patient. A one-hundred-volume (16 per cent.) solution caused smarting for one to two minutes. To cleanse the throat, and as a gargle, a fifteen-volume solution is sufficient.

In treatment the writer uses a special atomizer and a specially-devised glass syringe. In the latter a one-hundred- or more often a two-hundred-volume solution is used. The point of the syringe can be pushed through the membrane and a few drops of the solution pressed out. This should be done from one to three times daily, or more often for the first day or two, after which the spray alone may suffice. The spray is used in fifty- to one-hundred-volume strength once in four hours. The strong peroxide solutions must be applied only by the physician himself. The solu-

tions are all quite stable. The writer gives a table showing the time that solutions of different strength will keep. It should be borne in mind that the strong solutions are irritating to the skin, and will bleach the hair or colored fabrics. The results in thirty-two cases were very satisfactory, and there was a notable absence of after-effects. To summarize: (1) The peroxide solution disintegrates the membrane, thus rendering the bacillus accessible, and not injuring the healthy tissues. (2) The acid peroxide of hydrogen solutions are an effective germicide against the bacillus of diphtheria and not toxic to the patient. (3) The syringe is simple in construction and inexpensive, can be kept clean, and is not attacked by solutions which quickly corrode metals.

Tonsillotomy as a Preventive of Diphtheria. (*British Medical Journal*, September 24, 1892.)—Lancry, writing in the *Journal des Sciences Médical de Lille*, attributes the predisposition of the children in some families to contract diphtheria and croup to the presence of hypertrophy of the tonsils. He has frequently observed the coincidence of enlarged tonsils in adults as well as in children with a liability to infectious "sore throat" and diphtheria. In a very large proportion of his cases of tonsillotomy the enlargement was hereditary.

Almost all the sporadic cases of diphtheria which he has seen have been in children whose tonsils were hypertrophied. The indication is, therefore, in his opinion, to remove enlarged tonsils in children if any other child in the family has suffered from diphtheria. Before the operation is done some weeks should be allowed to elapse after exposure to infection, to allow time for the destruction of any germs that may have found their way into the child's throat.

Faults in Voice-Production which lead to Throat-Disease. (*Medical Press*, September 28, 1892.)—Lennox Browne says that wrong method and over-exertion of the voice are the most potent factors in causing disease of the vocal organs. There are three elements involved in voice-production,—the action of the lungs, of the larynx, and of the resonating structures (chest-walls, trachea, and various cavities in the respiratory tract). The best way of inflating the lungs is by a combined action of the diaphragm and intercostal muscles. It is extremely important to economize the exit of breath so as to prevent breath-taking being too frequent.

Faults in respiration are a fruitful cause of pharyngitis. The fault of carrying the lower register too high is noticed, also that of raising the pitch of the voice instead of raising the voice itself. A man should cultivate that part of his voice for public speaking in which he can produce the best results with the smallest amount of effort. All these faults may be followed by disease. Elocutionary education should be adopted as a mode of treatment or after other treatment to insure against relapse.

In the resonating organs one of the defects is a want of contractile power

in the soft palate, leading to a nasal tone from escape of air through the nostrils. Another is want of suppleness in the tongue. Both can be remedied by appropriate gymnastic exercises. Scientific training of the voice is the best means of retaining its health.

The Abductor and Adductor Fibres of the Recurrent Laryngeal Nerves. (*Lancet*, October 1, 1892.)—The results of investigations into the functions of the recurrent laryngeal nerves were recently communicated to the Royal Society by Dr. Risien Russell. The experiments, which were made on dogs, show that the abductor and adductor fibres in the recurrent laryngeal nerve are collected into several separate bundles, each pursuing an independent course throughout the nerve-trunk to the muscle or muscles which it supplies. In the adult animal simultaneous excitation of all the nerve-fibres in the recurrent laryngeal nerve results in adduction of the vocal cord of the same side, while in young animals the opposite effect, *i.e.*, abduction, is produced by the same procedure. In both young and adult animals, on exposing the nerve-fibres to the air, the abductor nerves are found to lose their power of electrical excitability much sooner than the adductors. In young animals, however, the abductor fibres retain their excitability longer. The abductor and adductor fibres through the whole length of the recurrent laryngeal to the termination in the muscle could be accurately separated. No explanation is apparent for the greater liability of the abductor nerves to degenerate. Sir Morell Mackenzie's theory that it might be due to the abductor fibres being more superficially situated is not borne out by the results of this investigation, in fact it is held to be disproved. Dr. Russell's view of the predominance of the abductor influence in young dogs is that the greater power of adduction in the adult is related to the increased power of phonation, while in the young animal phonation is imperfectly developed.

Laryngeal Tubercle and Tuberculin. (*Journal of Amer. Med. Association*, October 15, 1892.)—Dr. A. J. Erwin has treated twenty-six cases of tuberculosis of the lungs with tuberculin during the past year. Of these seven had in addition tuberculous laryngitis. In three the laryngeal disease was temporarily cured. One maintained the cure by returning to the treatment whenever the disease reappeared. Inferences: 1. Tuberculin will cure some cases of tuberculous laryngitis. 2. Treatment should be continued much longer than is generall practised. 3. For subsequent renewal of the disease, treatment should be repeated without delay. 4. It is likely to be successful only in early stages.

DERMATOLOGY.

IN CHARGE OF J. J. PRINGLE, M.B. (EDIN.), F.R.C.P. (LOND.),
Physician to the Department for Diseases of the Skin in the Middlesex Hospital, London.

Leprosy. (*Edinburgh Medical Journal*, December, 1892.)—Dr. Arning, of Hamburg, read a paper on this subject before the second International Congress of Dermatology, held at Vienna, September 5 to 10, 1892. He remarked that a wave of leprosy passed over Europe between the eleventh and fifteenth centuries, then gradually and in many countries wholly subsided. It would seem that after a long period of quiescence it is again reviving in Russia and Spain. Neumann, after investigating the etiology of some examples of this disease in Bosnia, in 1890, found that it could have no connection with the use of fish, since the patients, in accordance with the tenets of their religion, partook of a purely vegetable diet.

Campana, of Genoa, described a new micro-organism found in this complaint which resembled the bacillus lepræ. The several speakers considered the subject under the following heads: (1) Leprosy is a chronic infectious disease limited to mankind, and is conveyed directly and indirectly by the bacillus lepræ. (2) The importance of this disease for Europe must not be underrated. (3) Besides the old European seats of leprosy, new endemic centres have recently developed on this continent. (4) The conditions under which leprosy holds its old ground and develops new endemic foci are not yet clearly understood. Filth and poverty can no more be made exclusively responsible than a particular kind of food. (5) Old European centres must be strictly controlled and watched in regard to nationality, increase and decrease of cases, and peripheral spread of disease-foci. (6) Leprous patients coming from European or foreign centres of infection, and settling in non-leprous parts of Europe, must be registered by the sanitary authorities, and controlled as to their nationality, household, and changes of residence. Such registration should be conducted on international principles. (7) Should the disease establish a new footing, of endemic type, anywhere in Europe, then, but not until then, strict segregation in asylums or colonies should be at once resorted to. A similar segregation must be kept up in all the old centres of leprosy. (8) By such means a reduction in the numbers of lepers can be attained, and the disease eventually stamped out.

Lupus Erythematosus. (*Edinburgh Med. Journal*, December, 1892.)—Mr. Malcolm Morris introduced an exhaustive and excellent paper on this subject before the same Congress. He opposed the idea of a tubercular origin of the disease. He believes that it is an inflammatory affection belonging to the erythema group, and not necessarily connected with any microbic agent. At first it depends upon a local circulatory disturbance, which may be due to some external agency, such as cold or heat, or to some

nerve-disorder. The supervention of acute inflammation may be due to the invasion of the affected parts by a microbe such as the streptococcus of erysipelas. He accepts Kaposi's division of the varieties of lupus erythematosus into the "discoid" and "aggregate" forms. He has never seen the third variety described by this writer, in which the disease becomes universal and sometimes causes death, but is inclined to think that in such cases the local affection is complicated by an acute infective process. To avoid confusion he advises that the term lupus as applied to Lupus Erythematosus be discarded, and proposes "Erythema Atrophicans" instead. He was supported in this view by the German and Austrian members generally, but opposed by Boeck and the French specialists present.

Lupus. (*Edinburgh Med. Journal*, December, 1892.)—Dr. T. L. Milton has contributed an article on this complaint. He deals practically with the subject of treatment more particularly. The suggestions which he offers are based on the observation of four hundred and fifty-six cases treated in St. John's Hospital, and twenty-four treated outside of that institution. He discards the doctrine that lupus is due to struma, for several excellent reasons. That lack of strength, or poor condition, is not in any way the cause, he believes is proved by the failure of tonic measures to relieve this complaint. Nor does he believe in the bacillary nor in the syphilitic origin of this disease. He considers that lupus owes its existence to some widely-diffused and resistless agency, which acts unseen and silently on humanity, in conformity with some law as yet unravelled. In the treatment he believes that operative measures are not only painful, disfiguring, and disabling, but generally useless, and he fixes his faith upon the use of saline and mercurial purgatives with arsenic. Occasional resort may be had to the tartrate of antimony with advantage. While the local treatment must vary with the extent of the ulcerated surface and the vocation of the patient, he considers that ninety-five per cent. of carbolic acid is an excellent application. The patient should be supplied with the acid and taught how to use it, attacking daily as much of the lupoid surface as possible without too much pain being caused. All discharges should be removed carefully, before applying the acid. A hot turnip poultice is often effective in removing troublesome discharges. At night, some mild ointment, like spermaceti or zinc ointment, thinned down with liquor plumbi and sweet oil, may be applied, or, if ointments are objected to, the part may be bathed with hot undiluted liquor plumbi. Permanganate of potassium is often useful in mopping the surfaces. The writer also mentions a number of other practical points, too numerous to mention in a brief abstract.

Allysulphocarbamide, or Thiosinamine.—Hans von Hebra (*Vienna Internat. Dermatological Congress*, 1892) has investigated this drug, and presents a preliminary report upon its use, especially in lupus. After injecting a solution of the drug in alcohol or ether, smarting occurs for a minute

or so, followed by a local irritation, but there is no constitutional disturbance produced by it. Its effects were tested in five cases of lupus. While the author is unable to state whether lupus may be completely and permanently cured by the use of this drug, he does not hesitate to claim a very favorable influence upon lupoid tissue by its local action, due to its promoting absorption by the lymphatic system.

Sarcoma Cutis. (*Journal of Cutaneous and Genito-Urinary Diseases*, January, 1893.) By Dr. M. B. Hartzell.—A German, of sixty-two, in fair health, although somewhat anæmic in appearance, was under observation for two years, and presented a marked example of multiple pigmented sarcoma of the skin. The case is one of unusual interest, for many reasons. The prognosis is grave, the treatment is ineffectual, there is no satisfactory theory to explain the etiology, and every motive to promote further investigation of the malady is offered. The article is accompanied with three drawings illustrating the histology of the disease in various stages.

The writer also reports an Irish woman of forty-eight years, from whom a small-pea-sized tumor of a slate-blue color, with firm consistence, attached to the outer edge of the right nostril, was removed by operation. The tumor was excised and the wound thoroughly cauterized. The small eschar so formed was cast off within a week, leaving a healthy granulating surface, which healed rapidly. Microscopic examination showed the tumor to be composed of round cells, with an abundance of brown pigment scattered throughout the growth. Except that it was much less pigmented, the tumor was the counterpart, histologically, of the nodule excised from the stump of the thigh of the first case. Although undoubtedly sarcomatous, the growth thus far in its history has shown little malignancy. The report concludes with a brief review of the literature of this subject.

HYGIENE AND BACTERIOLOGY.

IN CHARGE OF A. C. ABBOTT, M.D.,
First Assistant in the Laboratory of Hygiene, University of Pennsylvania.

Influence of Light upon Bacteria. (Ueber den Einfluss des Lichtes auf die Bacterien. *Centralblatt fur Bacteriologie und Parasitenkunde*, Bd. xi., No. 25.) By Dr. Buchner.

In company with Minck, Buchner has determined the influence of light upon bacteria suspended in water, and made the astonishing observation, that in the case of the bacillus of typhoid fever, the bacterium coli communi, the bacillus pyocyanius, the spirillum of Asiatic cholera, and different bacteria of decomposition, a very large proportion of individual bacteria are deprived of their vitality when exposed to the direct action of sunlight. The disinfectant activity present in light is so great that as many as one

hundred thousand individual cells of the bacterium coli communi per cubic centimetre of water would be destroyed after one hour's exposure to the direct rays of the sun. That the temperature of the sunlight had nothing whatever to do with this experiment is evident from the fact that the temperature of the exposed tubes was but very little higher than those kept in the shade. In the light of these experiments Buchner calls into question hypotheses hitherto advanced in explanation of the disappearance of disease-producing bacteria from water to which they have gained access. In none of these theories has the influence of light been taken into consideration, a factor believed by Buchner to be of fundamental importance in the self-purification of running streams.

The Distribution of the Bacillus of Diphtheria in the Human Body. (Die Verbreitung des Diphtherie Bacillus im Körper des Menschen. *Zeitschrift für Hygiene und Infectionskrankheiten,* Bd. xiii., Heft 1.) By Dr. Frosch.

In contradistinction to what has hitherto been believed to be the relation of the bacillus of diphtheria to the diseased body, *viz.*, that the bacilli were present only in the false membranes of the human being, or at the seat of inoculation in lower animals, and that the constitutional expressions of the disease were due entirely to the action of the soluble poisons produced by these organisms, Frosch has found, by special methods of investigation, the bacilli in the internal organs in ten out of fifteen cases of death occurring in human beings from diphtheria. In these ten cases, besides being present in the false membranes at the primary seat of the disease, the bacilli were demonstrated in the brain, lungs, liver, spleen, kidneys, cervical and bronchial lymphatics, blood of the heart, and in the pericardial and pleural fluids.

In a few cases they were distributed pretty freely through these organs, while in others there seemed to be a selective affinity for special organs, such as the spleen and kidneys. They were least frequently present in the liver, and most commonly in the pneumonic nodules, in the spleen, and in the cervical and bronchial lymph-glands. In only one case were they absent from the blood of the heart. Frosch does not consider these results constant, but far more frequent than has hitherto been supposed.

The Physiological Effects of Air Vitiated by Respiration. (*Journal of Pathology and Bacteriology,* vol. i., No. 2.) Haldane and Smith.—The evil effects of the air of overcrowded and badly-ventilated apartments are ordinarily said to be due less to excess of carbonic acid than to the presence of an organic body or bodies, given off with it as a respiratory product. To this view the authors take exception, and consider the experimental evidence in favor of its support as of very doubtful value. The object aimed at in these experiments was to determine the physiological effects of air polluted by *normal* respiration and perspiration. Accidental vitiations

arising from want of cleanliness, either in the room or on the part of the persons present, were not taken into account. The following are the chief conclusions at which they arrived:

1. The immediate danger of breathing air highly vitiated by respiration arises entirely from the excess of carbonic acid and deficiency of oxygen, and not from any special poison.

2. The hyperpnœa is due to an excess of carbonic acid, and is not appreciably affected by the corresponding deficiency of oxygen. The hyperpnœa begins to appear when the carbonic acid arises to from three to four per cent. At about ten per cent. there is extreme distress.

3. Excess of carbonic acid is likewise the cause, or at least one cause, of the frontal headache produced by highly vitiated air, for hyperpnœa from defective oxygen begins to be appreciable when the oxygen in the air breathed has fallen to the point, which seems to differ in different individuals. In the case of one of ourselves (the authors), the hyperpnœa became appreciable at about twelve per cent. and excessive at six per cent.

PATHOLOGY.

IN CHARGE OF ALLEN J. SMITH, A.M., M.D.,

Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas.

The Point of Origin of Urinary Tuberculosis. (Du point de départ de la tuberculose urinaire. *Archives Cliniques de Bordeaux*, November, 1892.)—Are the lesions of tuberculosis of the urinary tract manifestations of an ascending or descending pathological process? is tuberculosis of the urinary organs secondary to a tuberculosis elsewhere in the body, and existing in the urinary organs, because of a metastasis through the renal circulation, or may it be due to the upward extension from a primary tubercular inoculation in the lower urinary tract? The author, A. Donnadieu, recognizes that the profession is divided upon this question. Pathological anatomists, as a class, tend to view the lesion as generally a secondary one in one or other kidney, extending thence downward along the ureter into the bladder,—a mode of occurrence which the author is disposed to accept in connection with acute general tubercular processes. But in the common, cheesy, surgical tubercular lesions the majority of clinicians tend to the idea that there occurs, as a rule, a primary tubercular focus in the lower urinary or genital structures, which gradually extends upward along the mucous surfaces of the bladder and ureter to the kidney. The author points out that in these cases there is rarely any chance of estimating the relative age of the lesions in the different parts attacked, the process being rarely met in the stage of the gray tubercle, but usually in the form of cheesy masses, or as ulcerations representing the excavations in the mucous

membrane due to the removal of such cheesy matter. He quotes twenty-nine reported cases to illustrate how little may be gleaned from autopsy as to the direction of extension in such instances,—twenty-one of these exhibiting the vesical and renal disease coexisting in such a state as to be inseparable, one case where both kidneys were normal and the bladder much diseased, two cases where the bladder was apparently free from disease when the kidneys were affected, and five cases the paucity of notes of which made them unavailable. He reminds the reader, too, that in one case, where there were no gross lesions of the bladder, microscopic examination indicated the existence of tuberculosis. Moreover, he quotes Guyon, who in eighteen cases encountered six showing tubercular cystitis without renal involvement, and who has met but a single instance of a unilateral renal tubercular lesion without other genito-urinary tuberculosis.

Under these circumstances, anatomical study being of such indifferent result, Donnadieu urges the value of clinical observation in the recognition of the real progress of the process. An examination of a number of clinical reports of cases regarded as examples of urinary tuberculosis indicates clearly that the kidney rarely enters into the clinical aspect until after, and often long after, the vesical symptoms are prominent. In many of the cases the prostatic body and deep urethra are among the earliest to show evidence of involvement; and whether the kidneys are or are not the first portion of the urinary tract to become tubercular, it is certain that they are the last to show symptoms of their diseased state.

Contributions to the Pathological Anatomy of Papilloma and Papillomatous Cancers of the Bladder and Uterus. (Beiträge zur pathol. Anatomie der Papillome und papillomatösen Krebse von Harnblase und Uterus. *Virchow's Archiv*, Bd. xxx., H. 3.)—Incited by the recent announcements of the existence of parasitic elements in various cancerous new growths, Kürsteiner has subjected to careful preparation and examination three vesical papillomata, such as were formerly spoken of as villous cancers, and a papillomatous growth of the endometrium. In the introduction to his paper he urges that the generally-accepted idea that papillomata are formed by a primary overgrowth of the connective-tissue substructure, with a secondary proliferation of the epithelium, may be a mistake. It is possible that the contrary may occur; that the epithelium may be primarily the seat of the proliferative process due to the presence of some such cause as the parasitic bodies described in cancerous epitheliomata, and that the connective-tissue growth may be secondary to this epithelial increase and to the irritation which underlies all. With a view of investigating this class of new formations for the presence of the so-called protozoon bodies, the above specimens, removed by surgical interference, were hardened in alcohol, embedded in celloidin, cut, stained by the eosin-hæmatoxylin method, and cleared with origanum oil containing a small amount of eosin. Of the four growths, one of the vesical papillomata and the uterine papilloma ex-

hibited clearly the appearances which have come to be regarded as parasites. The bodies described as occurring in the vesical papilloma are found within the epithelial cells, both those covering the papillæ and those lying deep between the papillæ. The parasites are found in groups of varying number, sometimes as many as sixty or eighty being present within a single epithelial cell, at other times only two or three. The individual bodies are rounded or oval in shape, are quite small (eight or ten micromillimetres, or more, in diameter), and are composed of an outer zone of a clear and relatively unstained protoplasm, and a central mass or nucleus which takes the eosin stain well. Besides these groups, which closely resemble the sporocysts of other authors, there are to be seen larger or smaller vacuoles within the protoplasm of the epithelial cells, these vacuoles sometimes occupying the major part of the cell and pressing the nucleus aside so as to give rise to a seal-ring appearance. The vacuoles may or may not contain a few of the rounded bodies, and in some cells where such spaces are to be seen together with the sporocyst appearance, there is a strong suggestion that the former represent the position of previous parasitic masses which have escaped from their places and have wandered into other cells. In a general way the bodies seen in the uterine papilloma were the same as these just mentioned, but somewhat smaller. In neither of the growths were any of the crescentic bodies described by Podwyssozki and Sawtchenko noted. The author does not assert his conviction that these are really independent organisms,—only experimental study will be able to establish that,—but he urges that in the mean time there is left to be done nothing else than the investigation of the constancy of these appearances, and the establishment of the places in which they are to be met.

As to the two vesical growths in which the author was unable to demonstrate the presence of the bodies, while this negative evidence upon the question of the parasitic origin of the growths must be considered to some degree, yet the fact that one of these, as well as the uterine papilloma, presented unmistakable signs of a cancerous nature, is by no means an insignificant circumstance in the general relations of the problem.

A Case of Distoma Lanceolatum in the Human Liver. (Ein Fall von Distomum lanceolatum in der menschlichen leber. *Virchow's Archiv*, Bd. cxxx., H. 3.)—Aschoff records the discovery of a specimen of distoma in a gall-duct of the liver of a boy aged fifteen years, dead after operation for perforative disease of the appendix vermiformis with localized purulent peritonitis. There was no suspicion of parasitic occupation of the organ, the worm being found in the sections from a small bit of the liver preserved for microscopic examination. Curiously, too, there were no local evidences of irritation (other than a very slight degree of nuclear proliferation at one point in the peribiliary tissue) from the presence of the parasite, an accumulation of desquamated epithelium, masses of inspissated bile, or hemorrhagic or inflammatory changes within or about the biliary passage. Nothing in

the history or occupation is suggestive in relation to the parasitic occupation of the liver. For several years he was employed in the vineyards, and for six months before his fatal illness he was working as a baker's apprentice.

This is the fourth recorded instance of this parasite (Buchholz, Chabert, Leuckart-Kirchner, Aschoff) occurring in man. Two of the other three worms were found in the gall-bladder, and in Chabert's case the parasite was recovered from the stool after the administration of a purgative.

A Study of the Artefacts of the Nervous System. (*New York Medical Journal*, September 24–October 1, 1892).—Ira van Gieson, under this caption, calls attention to the liability of artificially producing gross or minute alterations of the relative positions (heterotopia) of the gray and white matter of the nervous system, particularly of the cord, or alterations in the positions of the tracts of white matter. Of thirty-one cases occurring in literature and described as instances of veritable heterotopia depending upon congenital causes, or upon pathological changes after fœtal life, the writer rejects all save six, as the results in reality of bruising during the process of removal from the spinal canal, or in the subsequent technical steps of preparation. These six cases, accepted by Van Gieson, include four malformations of the gray matter of the cord and two of the white columns in the medulla oblongata; and to each of these he adds a personal case. All of the true cases of heterotopia of the gray matter, save the author's case, are attributed to Pick (*Arch. f. Psychiatrie*, Bd. vii., 1878; *Prager Med. Wochensch.*, No. 10, 1881). The case of Hans Virchow (*Kölliker's Festschrift*, Leipsic, 1881), described with this group, really does not belong here, being merely an instance of asymmetry rather than heterotopia. The two instances of heterotopia of the white columns are those of Pick (*Arch. f. Psychiatrie*, Bd. xxi., 1890, and by Cramer (*Centralbl. f. allg. Pathol. u. path. Anatomie*, Bd. i., No. 11, 1890). The conditions which are really artefacts, but have been described as heterotopias, consist in irregularly-shaped gray horns, reduplications, whole or in part, of the gray matter, redundant bits of gray matter in different positions, the existence of abnormal clefts, canals, and cyst-like spaces, as well as other abnormalities. The author states that these artifically-produced abnormalities of structure are clearly distinguishable in most cases from true instances of heterotopia, in that in the former the lesions are generally produced by the forcing of portions of the tissue of one level of the cord upward or downward into the adjacent levels. Thus, by making serial sections above and below the level of the apparent heterotopia, there will be found in the case of an artefact some portion deficient by just such tissue as is found in excess in the part supposed to be the seat of a congenital anomaly. In real heterotopia of the gray matter, the gray crescents are not misshapen at any part of the cord, nor do they show any deficiencies. Small bits of redundant gray matter are especially likely to form this class of anomalous structure, and these

are likely to consist of the lower form of gray matter forming the gelatinous caps of Rolando.

In the artificial deformities the opposite is the case: the horns are misshapen, and extra bits of tissue can be traced by serial sections to other levels, and the neighboring white matter is generally distorted in a corresponding manner.

CLIMATOLOGY.

IN CHARGE OF GUY HINSDALE, M.D.,
Lecturer on Climatology in the University of Pennsylvania, Philadelphia.

Beri-Beri, or Kakké, of Japan. (*University Medical Magazine*, January and December, 1892.)—Dr. Albert S. Ashmead has made a study of this disease as it recently appeared on board a vessel whose crew was prostrated by beri-beri in the tropics. The bark was loaded with twenty-two hundred tons of raw sugar, and made the voyage from the Philippine Islands, by way of the Cape of Good Hope, to Norfolk, Virginia, in one hundred and sixty-seven days. Eleven of a crew of fifteen were attacked, and two died. All suffered great privations incident to a stormy voyage. Dr. Ashmead believes that the etiological importance of the southwest trade-winds in beri-beri has been very much exaggerated, if it is not altogether imaginary, and he limits their influence simply so far as they bring wet and heavy weather. Such weather, he believes, would be innocent of the production of the disease, if there were no carbonic acid gas emanating from a cargo undergoing fermentation. Noxious gases from this source are believed to have been the cause of the disease on shipboard, and Dr. Ashmead calls attention to this as a possible cause of kakké in Japan. "In Japanese houses charcoal is continually burned for heating and cooking, and the natural humidity of the hot season keeps over everything a deep layer of pernicious gases. . . . The fact that the removal of the beri-beri patients to higher altitudes, where the air is pure, results in improvement, is proof positive that the poison is inhaled."

In Japan kakké occurs in the season when the sun is very hot and the air very damp, and on the days when these conditions are particularly oppressive the patients are always worse.

[Somewhat the same seasonal relations are observed in Madras, India, as follows: Fifteen per cent. of the deaths from beri-beri occur in the hot season, comprising March, April, May, and June; fifty-one per cent. in the rainy season, comprising July, August, September, and October; thirty-four per cent. occur in the cooler season, November, December, January, and February. The fact, however, that the disease occurs in such widely separated regions as, for example, the Eastern Archipelago, China, Corea, India, Java, the Malayan Peninsula, Sumatra, New Guinea, Madagascar, Congo,

and Brazil, where various modes of living obtain, and where, as a rule, the local and household conditions are widely different from those found in Japan, would lead one to attach less weight to the influence of carbonic fumes, and more to the general features of a tropical climate, in the production of this infectious disease.—G. H.]

Sea-Sickness, and Voyaging for Health.—Dr. Thomas Dutton, in his little book (third edition, London, 1892), acknowledges that there is no absolute specific for sea-sickness, but claims great advantages from the preparatory treatment, consisting of a restricted diet for fourteen days, a laxative pill, saline water before breakfast, and bromide of ammonium three times a day. The preliminary diet for an invalid should be chiefly of bovinine, tea made specially, and hard biscuits. Dr. Dutton advises the voyager to have his own tea made by allowing boiling-hot water to remain on the leaves only four minutes. In the acute stages of sea-sickness, one drop of pure chloroform in two ounces of Seltzer-water every half-hour, and a mustard-plaster placed over the gastric region for fifteen minutes, are found to give the best results. Champagne is to be given only in the later stages, for the depression. Ginger-ale is advised; bottled stout is condemned.

The health resorts on the English coast and Mediterranean shore are briefly characterized, and notes on the longer ocean voyages are appended.

Beneficial Influences of Snow.—The *New York Medical Journal*, December 31, 1892, shows that snow exerts a beneficial influence on the nerves, impressing us in a peculiarly grateful way after a spell of murky or foggy weather. It is helpful, also, for it ekes out the daylight and assists the belated traveller along roads that are overshadowed by woods.

A snowfall is as benign as it is beautifying during these days of the minimum of sunshine. During these dark days of the winter solstice the glitter of the snow most happily compensates for the paucity of sunlight, and has an added hygienic value in cleansing a foggy and dust-laden atmosphere, second only to a vigorous rainfall in its purifying and ozonizing power.

Cholera in Russia. (*Deutsche Medicinische Wochenschrift*, Berlin, December 1, 1892.)—The general statistical report of cholera in the Russian Empire shows that by September 13, 1892, fifty governments had been attacked by the epidemic. Leaving out the Caucasus, the Russian governments and provinces may be divided into three groups, according to a descending scale of mortality.

The first group includes the government of Saratow, 13,758 deaths; the Cossack territory of the Don and Rostow, 18,931 deaths; the governments of Voronedig, 6414 deaths; Samara, 10,229. The second group comprises the governments of Tambow, 4392 deaths; Turkestan,

9290 deaths; Simbirsk, 4815 deaths; Tobolsk, 3425 deaths; Orenbourg, 3510 deaths; Kasan, 2619 deaths; Tomsk, 1842 deaths; Karkow, 2330 deaths; Penza, 1624 deaths; Oural, 2110 deaths; Viatka, 2283 deaths; Oufa, 1391 deaths; Astrakhan, 7860 deaths; Ekaterinislow, 1147 deaths; Akmelinsk, 1040 deaths. The third group embraces the other governments having an average mortality of 1000, 500, or 100 and under; also some cities, as St. Petersburg, 873 deaths, and Moscow, 321 deaths.

Taking into account the fact that the figures reported represent the minimum of choleraic deaths throughout the Russian Empire, and adding to the estimates previously obtained the results of reports for November, we may state the total number of choleraic deaths at three hundred thousand.

The slight prevalence of the epidemic in Europe and its restricted area are worthy of note. It ravaged Russia and gained a strong foothold in Hamburg, but it only touched central, southern, and western Europe. It reached the continent of Europe when its force was nearly spent, and, encountering energetic measures of resistance, it was quickly conquered.

REVIEW OF ITALIAN, SPANISH, AND PORTUGUESE MEDICINE.

IN CHARGE OF A. M. FERNANDEZ DE YBARRA, M.D.,

Corresponding Member of the Medico-Chirurgical Academy of Madrid, Spain, the Argentine Medical Circle of Buenos Ayres, South America, and the Society for Clinical Studies, of Havana, Cuba.

Etiology and Pathogeny of Pericarditis. (*Giornale internazionale delle scienze mediche*, fasc. 9, 1892.) By A. Rubino.

Primary Pericarditis.—The only traumatic pericarditis known is the one produced by a solution of continuity. Regarding pericarditis caused by contusion, it can be admitted, no doubt, that germs in a latent state may develop by the baleful influence of that trauma, but the mechanical action alone causing the disease is a controversial possibility. Pericarditis *à frigore* certainly exists, though not produced directly by cold, but by the local effect of a pathogenic virus put into activity by vascular modifications induced by the chill through reflex action.

Secondary Pericarditis.—It may be produced not only by infectious diseases or rheumatism, but also by the acute exanthemata, tuberculosis, syphilis, pyæmia or septicæmia, abdominal typhus, malaria, etc. We know that pericarditis can precede the articular manifestations of rheumatism, and also that those indications of the disease may never appear, which fact reduces the number of the forms of idiopathic pericarditis. The tuberculous process may begin in the pericardium, just in the same manner as it commences in the pleura; but more frequently tuberculous pericarditis is produced by propagation or by general infection. In the different forms of chronic

nephritis, it gives rise to pericarditis by auto-intoxication. There is also a scorbutic pericarditis and a neoplastic cancerous pericarditis.

Experimental Pericarditis.—The author calls attention to the experiments of Banti and De Vanni which have established the existence of pericarditis by direct inoculation of the pneumococcus; to those of Mya and Belfanti, injecting the bacillus of typhus into the præcordial region, which experiments proved successful. Dr. Rubino proposes to extend his investigations by trying other micro-organisms, and to study, experimentally, the action produced by cold and trauma in the causation of pericarditis. He has chosen the *staphylococcus aureus* and the *staphylococcus albus*, on account of their frequent presence under mucous membranes, and also owing to the part recently attributed to them in the etiology of acute articular rheumatism and its complications.

A New Diagnostic Sign of Stenosis of the Œsophagus. (*Rivista clinica e terapeutica*, Naples, July, 1892.) By Vanni.

On percussion a sub-tympanitic, sonorous sound is discovered on the left side of the vertebral column, the area affected occupying a rectangular space with a longitudinal axis. This resonance is changed into dulness when the patient has drunk a large quantity of liquid. If the œsophagic sound is then introduced down to the point of the stricture, it brings out a muddy and fetid liquid. Auscultation reveals a gurgling sound. Besides those diagnostic signs, the patient shows the following very interesting phenomenon: On assuming a reclining position, the pulsations of the femoral artery diminish in volume and strength when the patient drinks a quantity of liquid exceeding four hundred grammes; and if this liquid is slowly withdrawn, by means of the stomach-pump, the beats of the femoral artery also slowly resume their normal amplitude.

Dr. Vanni made experiments with dogs in order to satisfy himself of this phenomenon. He found that arterial tension diminishes in the femoral after repletion of the œsophagus by means of an elastic ball introduced in it and tied below. Eichorst has already indicated that there is a cessation of beats in the right radial artery at the time of deglutition, but yet that phenomenon takes place only when there is an anomaly in the origin of the subclavian. Regarding the new diagnostic sign of stenosis of the œsophagus before mentioned, Dr. Vanni claims for himself the honor of having been the first to call attention to it.

Some Differential Characteristics between the Bacillus of Typhus Fever and the Bacillus Coli Communis. (*Rivista clinica e terapeutica*, Naples, August, 1892.) By Dr. M. Crescenzi.

In trying to find the *bacillus typhosus* in the stools of several typhus patients, the author had always found the *bacillus coli communis*, which he even obtained in a pure culture from a patient suffering a severe attack of typhus fever. Wishing, therefore, to be able to distinguish the two kinds

of bacilli, and finding that the cultures made with Italian potatoes did not show any difference between them, Dr. Crescenzi sent to Berlin for some German potatoes, and the results obtained with them completely rewarded his efforts. Here are the differences between those two micro-organisms:

The bacillus of typhus fever gives a less pulpy culture, of more dry appearance, and of a color not so yellow as the bacillus coli, and all these characteristics were obtained with German potatoes of both acid and neutral reactions. In an alkaline broth (carbonate of sodium was used) the *bacillus typhosus* developed less readily than the *bacillus coli communis*, and in a broth containing 0.4 per cent. of sodium carbonate the bacillus of typhus fever did not develop at all in less time than eight days.

Application of the Galvano-Cautery, both Chemical and Thermic, in the Treatment of Chronic Coryza. (*Revista de medicina y cirugía prácticas*, August 22, 1892.) By Dr. Luciano Barajas y Gallego.

The author was very favorably impressed with the good results obtained by Dr. Garrigon-Desarènes, and decided to try his procedure. He treated forty-eight cases of hypertrophied coryza, eighteen by electrolysis, and the remaining thirty by thermo-galvano-caustic punctures. On account of the patients not being able to stand the electric current, he discontinued the treatment in five cases of the first series, and to the other thirteen he made twenty applications with the positive pole in the nasal fossæ, with a current of twenty milliampères' intensity, and during ten minutes. Out of these thirteen patients, seven did not receive any benefit at all, four did not finish the treatment, and he cured two.

Of the second series of thirty cases treated by the thermo-galvano-caustic punctures, to whom he made twelve distinct applications, the result obtained was eight cured, twelve improved, and ten did not continue the treatment up to the last.

Dr. Barajas thinks that the comparison of these two series of cases shows the advantage of the ignipuncture treatment, because in the two cases cured by electrolysis hard cicatrices were formed, while by the second method he did not get this drawback, nor any of the unpleasant accidents which such enemies of ignipuncture as Hering, Voltolini, Küper, etc., point out.

Radical Treatment of Gastroectasis caused by Stenosis of the Pylorus. (*Gaceta Médica Catalana*, Barcelona, October 15, 1892.) By M. Ribas Perdigó.

It is of great importance to make a good diagnosis before undertaking a serious surgical operation, if we wish to avoid those so-called exploratory incisions which are not so devoid of danger as some surgeons would make us believe. In a patient suffering either from an ulcer of the stomach, a toxic gastritis, a localized peritonitis, etc., or in whom is detected a tumor of any kind pressing on the pylorus or the first portion of the duodenum,

or from any other cause producing occlusion of the lower orifice of the stomach, it will be necessary to bear in mind the habitual physical signs (absence of catarrh of the stomach, great gastric dilatation and exaggerated peristalsis, alternating periods of diarrhœa and constipation, intense hunger and thirst, rapid emaciation, diminished quantity of urine, etc.), and to perform laparotomy. This operation should be carried out according to Billroth's method, and with the view of finding out at once the cause of the stricture. The possible causes of the malady are, as we all know, many and varied: we may mention among them peritoneal adhesions due to an old inflammation, abdominal tumors in general, displacement of one of the viscera pressing on the pylorus, a neoplasm situated in the stomach, the duodenum, or the pylorus, a polypus of the gastric mucous membrane (*e.g.*, the cases of Cruveilhier and Ewald), a foreign body full of sarcinæ (the case of Richter), and, lastly, cicatricial stenoses in general as the result of an old ulcer, a toxic gastritis, or any other cause. The operative interference has to be in accord with the peculiarities of the case. When the pyloric stenosis is cicatricial in character, great benefit is obtained by forced digital dilatation, first put in practice by Loretta, then by Poggy, and others afterwards, with excellent results; the operation of Heinecke and Mikulicz is the only one, however, that prevents a relapse. The resection of the pylorus is indicated in cases of extreme stenosis.

The author also makes mention of gastroenterostomy, so much put in practice nowadays, and speaks with great enthusiasm of the benefit conferred upon humanity by Loretta with his forced digital dilatation for the cure of pyloric stenosis.

The clinical history of the case he narrates is here condensed as follows:

Man, twenty-nine years old; no hereditary taint of any kind; up to his sixteenth year his health was excellent, until he had a fall; a few days after he began to vomit frequently, complained of tension and pain in the epigastrium, suffered from impaired nutrition, naturally followed by emaciation. He remained in that condition several years. When examined by Dr. Ribas Perdigó, he showed ballooning of the epigastrium and neighboring regions, and exaggerated peristaltic movements; by palpation was noticed that peculiar resistance offered by an air-cushion, and all the signs of gastric dilatation; the tongue was coated, the breath fetid; there were loss of appetite, regurgitation, eructations, attacks of vomiting every four or five days, gastric pains, constipation. The diagnosis of gastric dilatation caused by stenosis of the pylorus was made. Before the operation the stomach was washed with an alkaline solution, and afterwards with an antiseptic liquid. The abdominal section showed the presence of great induration and stenosis of the pylorus, which extended down to the vicinity of the duodenum. Dr. Perdigó then made a permanent fistulous opening between the stomach and small intestine (gastroenterostomy). There was by this means a complete cure of the disease.

Effects of the Inoculation of Glanders upon the Nervous System. (*Gazzetta medica di Torino*, June 9, 1892.) By Martinotti.

The inoculation of the specific poison of glanders in the nervous centres killed in a short space of time all the animals with which the experiment was made, not only those belonging to the equinia, but the refractory ones as well, the virulence of the poison increasing with this transfer of soil. All the signs of profound intoxication and the deep organic changes thus superinduced explain the rapidity of death, be it caused through the seriousness of the nervous lesions (inflammation accompanied by enormous microbian proliferation), or by the production of toxines acting as necrogenous agents.

Pathogenic Action of the Influenza Bacillus. (*Riforma medica*, June 22, 1892.) By Bruschettini.

The following are the conclusions reached by the author after making a series of experiments:

1. The influenza bacillus is not pathogenic, when inoculated, to the dog nor to the white mouse, but it is in a high degree to rabbits and guinea-pigs.

2. When injected in the trachea or directly into the blood, it produces a diffuse bronchitis with considerable increase of temperature, and in grave cases interstitial broncho-pneumonia.

3. Injected in serous cavities, it excites an abundant sero-fibrinous exudation.

The author claims to have found this micro-organism in nine out of eleven patients suffering from influenza, and made pure cultures of it in blood serum. He feels sure of the origin of the microbe which he used for his experiments.

Conformity of the Visual Axes with a Condition of Strabismus. (*Annali di ottalmologia*, Pavia, vol. xxi. p. 307.) By J. Astengo.

In divergent strabismus as well as in the convergent type, there is no similarity between the angle of deviation and that of the visual axes. The positive visual axis is more frequently met with than the negative, in the proportion of about sixty to seven; it is also more common in convergent strabismus than in divergent, in the proportion of six to one. In the most extreme cases of convergent or divergent strabismus, the visual axes do not present any similarity whatever to the angle of deviation.

That is what makes the paper of Dr. Astengo very valuable.

Abadie's Method in the Treatment of Sympathetic Ophthalmia. (*Annali di ottalmologia*, Pavia, vol. xxi., fasc. 4 and 5.) By E. Baquis.

In the case spoken of in this paper, the intra-ocular injection of mercuric chloride, practised twice in eight days, and in the quantity of two

drops of a solution of one per thousand each time, produced these remarkable good results :

1. Quick disappearance of pain and inflammatory symptoms in the sympathizing eye.

2. Abeyance of the synechiæ, the injection of the cornea, and the suffering in the globe of the affected eye.

Mercurial inunctions, applied later on, caused the permanent clearing out of the vitreous body, and the return of vision. At the time of publication of the report, six months after this treatment, the eyesight of the patient continued good.

FORENSIC MEDICINE.

IN CHARGE OF LORENZO D. BULETTE,
Of the Philadelphia Bar.

LEGAL LIABILITY OF A PHYSICIAN UPON WHOSE CERTIFICATE A SANE PATIENT IS COMMITTED TO AN INSANE ASYLUM.

THE present legal status of insanity is the fruit of a more acute and thorough investigation of its phenomena in the light of riper experience and a greater abundance and variety of facts, leading to a more precise definition of legal accountability in the various forms of mental impairment.

The changed views of medical scientists respecting the nature of this appalling malady, in its different manifestations, have produced changes in treatment, and these changed medical notions have naturally reacted upon the law and given rise to corresponding changes in the judicial aspects in which insanity was formerly viewed. Accordingly, in questions affecting the civil rights and the extent of criminal responsibility in the insane, the harshness of the common law has been toned down by a more enlightened judicial interpretation, or that law itself has been superseded by more humane statutory provisions.

The same spirit pervades the judicial construction of these statutes, or "lunacy laws," as they are sometimes called, and thus becomes the source of many interesting questions affecting the legal responsibility of the medical practitioner in the performance of the duties imposed upon him by these statutes. Actions for damages against physicians, growing out of the statutory provision requiring an examination of an alleged insane patient with a view to ascertaining whether he is a fit subject for detention in an insane asylum, are becoming more and more frequent; and the question is often

asked, What is the legal responsibility of a physician for giving a false certificate of insanity?—that is, for signing a certificate of insanity by virtue of which a person is committed to an insane asylum, and it subsequently appears that such person was not insane at the time the examination was made.

The case thus presented, where the physician examines the patient with respect to his sanity, and merely signs the required certificate without doing anything further towards procuring the confinement of the alleged lunatic, may furnish two grounds of liability in the physician: *first*, for the consequences to the patient that flow from the conduct of others acting under the authority conferred upon them by the certificate; and, *second*, for the consequences which ensue if he signs such certificate without exercising due care in making an examination of the patient; or, if, upon his own personal examination, he is not satisfied and fails to make due inquiries.

The ground of alleged liability in actions of this kind is based upon the jealous care with which the law guards the personal liberty of the citizen, and the severity with which it punishes any unwarranted infraction of this sacred right. But the mere fact that a physician makes a false certificate of insanity does not constitute such an infraction of this right as will render him liable in damages therefor, where he exercised due care in making the examination, and did not cause or procure the arrest and confinement of the patient in an insane asylum.

In a case[1] in which this point was decided, the complaint alleged that the defendants, who were practising physicians, did falsely and maliciously certify in writing, under oath, that they had examined into the state of health and mental condition of the plaintiff, and that in their opinion she was insane and a fit subject to be sent to the State asylum for the insane, by means of which false, fraudulent, and malicious certificate the defendants wrongfully, unjustly, and without probable cause, by procuring such certificate to be filed or lodged with the superintendent of the State asylum for the insane, caused and procured the plaintiff to be arrested and detained in prison for the space of two months. To this complaint it was objected that it does not allege that the defendants actually arrested or procured any one to arrest the plaintiff. The averment is that by means of their certificate they caused her to be arrested and imprisoned, but how or in what way the certificate and arrest are connected is left to conjecture. It does not appear how the making of a false certificate in this case affected the personal liberty of the plaintiff. The complaint discloses nothing which shows that the loss of liberty was the necessary consequence of the wrongful act imputed to the defendants. There is no averment that the defendants unlawfully caused or procured the arrest of the plaintiff.

In sustaining this objection the Supreme Court said, "They could not have caused her arrest by the mere making and filing of a false certificate. The certificate was not an order for her arrest, nor did it contain any re-

[1] Force *vs.* Probasco, 43 N. J. L. 149.

quest to any other person to deprive her of her liberty. The person upon whose petition she was admitted to the asylum might have made use of this certificate to effectuate his purpose, but the certificates of all the doctors in the land would not of themselves have restrained her of her freedom in the least degree.

"The charge that the defendants did the single act of making and filing the false certificate excludes the presumption that they did anything else to procure the arrest.

"The allegation that by means of such false certificate the defendants procured her arrest is an averment that the defendants' act was attended by a consequence which could not possibly have resulted from the mere making of a false certificate alone. It was necessary that some one should have petitioned for her admittance to the asylum, and that she should be actually arrested, neither of which acts is imputed to the defendants in the complaint. Neither defendant is alleged to have signed the request for her admission to the asylum, or to have procured another to do so. It does not appear how the false certificate aided in or procured her arrest, or that it was given with intent to enable some one else to procure the arrest, and used by complicity with the defendants for that purpose."

While, therefore, a physician may not be liable for the consequences that flow from his certificate founded on a reasonably careful examination of the patient, a responsibility may yet arise from the second source mentioned above,—carelessness or negligence in making the personal examination. Negligence is usually the main question in actions of this kind; and it should be observed that the burden of proof in such cases is on the plaintiff, the presumption being that the physician did his duty. Nor is the burden shifted by the mere fact that the certificate as to the insanity is false, as that is consistent with an honest mistake of judgment after the most careful examination and inquiries. Moreover, such certificate is a privileged communication; and where a communication is privileged, the plaintiff must not only show that it was not true, but that the defendant physician had no reasonable grounds to believe that it was true. It must be remembered, however, that it is only when thus performing a legal duty imposed upon him that his communication is privileged; for, when not so acting, our courts have decided that it is clearly libellous for a physician to publish of another that he is "insane and a fit person to be sent to the lunatic asylum," or that "he is so disordered in his senses as to endanger the persons of other people if left unrestrained, and that it is dangerous to permit him longer to go at large."

But the point of special practical interest to the medical profession is to learn, by means of the facts which have appeared in evidence in cases hitherto adjudicated, just what conduct on the part of the physician in making his examination has been decided to be negligence. The consideration of this question, however, will be reserved for a future paper.

BOOK REVIEWS.

THE HYGIENE OF THE SICK-ROOM. By William Buckingham Canfield, A.M., M.D., Lecturer on Clinical Medicine, and Chief of the Chest Clinic, University of Maryland, Baltimore, Md. Philadelphia: P. Blakiston, Son & Co., 1892.

This book is especially intended for nurses, and considers briefly asepsis, antisepsis, disinfection, bacteriology, immunity from disease, heating, ventilation, food, tuberculosis, typhoid fever, Asiatic cholera, measles, diphtheria, and a number of other important diseases. This manual is a condensation of a series of lectures delivered before the Training-School for Nurses in the University of Maryland. It is not intended to deal exhaustively with bacteriology, but to show, in a clear way, the connection between bacteria and disease, and how we may prevent the latter by destroying the former, as far as possible.

The experience of the writer in the matters of which he speaks, the number of authorities consulted, and the clear style in which this little book is written, are ample guarantee for the success of the work. It is eminently practical, and must appeal at once to every intelligent person who is in any way connected with the care of the sick. In the chapter on Tuberculosis, for example, the author suggests nine rules which should be enforced in order to minimize the danger of contagion. Attention cannot be too frequently drawn to this subject, especially for public gatherings and at large summer and winter hotels.

One portion of this admirable little book cannot be selected for praise without injustice to the rest, and the writer is to be congratulated upon the admirable manner in which he has presented the subject to the attention of the public.

HAND-BOOK OF MATERIA MEDICA, PHARMACY, AND THERAPEUTICS. By Samuel O. L. Potter, A.M., M.D., M.R.C.P., London, Professor of the Theory and Practice of Medicine in the Cooper Medical College of San Francisco, etc. Fourth Edition. Revised. Philadelphia: P. Blakiston, Son & Co. Pp. 781.

The appearance of the fourth edition of Dr. Potter's hand-book is sufficient indication of the appreciation with which it has been received by the medical profession. Although the size of the work, together with the fact that it is now in the sixth year of its existence, precludes an extensive criticism of it, a short review may be given for the sake of those who are not familiar with the preceding editions.

The first section treats briefly of the classification of medicines. This we regard as a very valuable synopsis, and of distinct advantage to the book, since it leaves the author free to discuss his drugs, in the next section, in alphabetical order. For, although such an alphabetical grouping may be inferior from a scientific point of view, it is vastly superior from a practical stand-point, and saves a deal of annoying index-searching.

In the succeeding section—upon materia medica and therapeutics—there is a concise description of each drug, including its chemical and physical properties and derivation, its various preparations, its physiological action, and, finally, its application to disease. It is surprising how much useful information is to be found in the

pages of this department. Very many of the newer drugs receive consideration, but it is to be regretted that the author did not give at least a brief description of still others whose usefulness has been equally well attested. Such a course would have brought the volume quite up to date, and have made it invaluable as a book of reference.

Following this section is an excellent one on pharmacy, including prescription-writing, remarks on incompatibility, and a very clear description of the ordinary pharmaceutical methods. It is designed—and very successfully—so to instruct the practitioner that he may be able to dispense his own medicines if he so desires.

The greater part of the remaining three hundred pages of the volume is occupied by the department of special therapeutics. This is a great improvement on the "index of diseases," with the list of remedies for them, found at the back of some of the works on therapeutics. Under the headings of the different diseases, arranged in alphabetical order, is given a digest of the therapeutics of each. A large number of formulæ, the author's own or favorite ones of various well-known clinicians whose names are appended to them, are to be found scattered through this section. This clinical department is one of the great features of the book.

The appendix which follows contains, among other useful matter, a very interesting list of formulæ supposed to represent many of the most widely-known patent medicines. The last thirty-nine pages are occupied by a good index.

The great qualities of Dr. Potter's treatise are conciseness and convenience. Its chief fault is that too little attention has, in our opinion, been given to the physiological action of drugs. It would have been impossible, however, to include in one volume all the valuable information now contained in this work, together with a full discussion of physiological action, and it has evidently been the author's object to devote especial attention to the practical in materia medica and therapeutics. Still, we think that the subject of physiological action could possibly have been made a little more full with advantage and without material increase of space. We can heartily recommend Dr. Potter's book to all classes of physicians.

Taylor's Medical Jurisprudence. Eleventh American, with citations and additions from the twelfth English, edition. By Clark Bell, Esq. Published by Lea Brothers & Co., Philadelphia.

This valuable treatise has been long in the hands of practitioners of law and medicine, and is for this reason too well known to make necessary any extended examination of its contents.

While this edition contains, with some revision, the matter with which all former editions have been enriched, the work of the present editor is confined largely to the digesting of decisions of the courts of the different States as they affect the law of the following subjects: Dying declarations; statutes conferring the privilege from disclosure by the physician of information imparted by his patient and necessary to enable the former to prescribe; medical experts and medical expert testimony and opinion evidence; malpractice; abortion; legitimacy; criminal responsibility of the insane homicide, as determined by the application of the "right-and-wrong test" and the "volitional or uncontrollable-impulse test;" drunkenness and delirium tremens as defences to crime. Mention is also made of recent important cases of death from gunshot wounds and post-mortem appearances after death by electricity, as illustrated by reports of autopsies made upon the bodies of murderers electrocuted under the recent New York statute providing for this mode of capital punishment.

These additions contribute much to the value of the book, and will prove serviceable to counsel in the preparation of their briefs.

NOTICE.

SECTION OF GENERAL MEDICINE OF THE PAN-AMERICAN MEDICAL CONGRESS.

THIS unique assemblage promises to be one of the most important events that has occurred in the history of medicine in the Americas. Its success is assured by the large number of valuable papers already promised. The Section on General Medicine, which is one of the most important that has been created, bids fair to be one of the most successful in the entire Congress; and already many valuable contributions are in process of preparation, and will be read at the meeting in September. It is hoped, with the hearty co-operation of all physicians living not only in North but also in South and Central America, that the work in this Section will be memorable; and each physician living on this continent is requested to join this most important Section, and to prepare a contribution to be read before that body. It is especially requested that those intending to join this Section or to read papers shall at once send their names, with titles of papers, to the secretary, Dr. Judson Daland, No. 319 South Eighteenth Street, Philadelphia, Pa., so that they may be noted on the calendar and given their appropriate places.

NOTE TO CONTRIBUTORS.

Manuscript accepted will be liberally compensated or reprints furnished in lieu of such compensation.

It is distinctly understood that all articles accepted are for our exclusive use and are not to appear in any other publication.

All matters of business and subscriptions to be sent to the Publishers. Manuscripts and books for review should be addressed to the Editorial Office, 319 South Eighteenth Street, Philadelphia. EDITOR.

INTERNATIONAL
MEDICAL MAGAZINE.

Vol. II.] APRIL, 1893. [No. 3.

ORIGINAL COMMUNICATIONS.

HARE-LIP: ITS CAUSES AND TREATMENT; WITH REPORT OF CASES.

BY J. H. MANLEY, M.D.

Of all the repulsive deformities witnessed in a child, after its birth, there is none more repulsive to the eye than that cleft state of the soft parts, which lie immediately over the superior alveolar arch, which is designated hare-lip. There is every degree of deformity associated with this condition. With a few we will find that it is limited to the soft parts alone, the gum and hard palate escaping. Again, it will appear double, cutting two longitudinal furrows through everything,—the naris, on either side, the lip, alveolar arch, hard and soft palate. With the latter, owing to the want of lateral support, the alæ of the nose are dragged aside and its bridge collapses. Along with this there is generally a bulging forward of the intermaxillary bone, producing a snout-like projection. In all cases in which the cleft is completely through on either side the buccal vacuum is lost, and the infant is unable to suckle. The secretions of the mouth with the food freely blend with the nasal secretions.

As a rule, in all cases in which there is a complete breach through the alveolar wall, there is a deflection of the divided segments of the alveolar arc. This is what produces that enormous hiatus which we often encounter in such cases. I have seen the vomer wholly absent in two cases. The perpendicular plate of the ethmoid in osseous clefts is invariably either deflected to one side or else crowded far forward. At first sight we gather the impression that when the mould was cast there was ample plastic material to produce symmetry and perfection; but that, through some diverging

phenomena in the setting, it became deranged or misplaced; in other words, that there has been rather a defectiveness than a deficiency of development; that there has been no loss of substance, but rather a misplacement.

This view is in the main correct; yet, owing to atrophic processes during intra-uterine life, at the time of birth there is a scarcity of substance in the alveolar and labial structures so deranged.

In those very aggravated cases in which it would seem that the entire palatine dome was wanting, and an enormous chasm extends from the pharynx away forward through both segments of the hard and soft palate, alveolar arch, gums, and lips, as the infant possesses no means for closing the mouth, not being able to approximate the lips, there is a constant, uncontrollable drivelling of saliva and food; and, as the raw, irritable air continually penetrates the open buccal and nasal cavities, there are continuous rhinitis and coryza, which tend to the formation of an abundant muco-purulent discharge.

If now we critically inspect the conformation of this chasm, we will observe that it is cuneiform in outline; that the levator palati on either side has contracted and drawn the soft, velvety flaps of the soft palate very far apart, so that the gap is the widest at its pharyngeal terminus. Holding the mouth widely open in a good light, we will distinctly see the two superior fossæ formed by the now nude turbinated bones. Looking far upward, along the inner border of the perpendicular plate of the ethmoid, we will note a central ridge precisely in the mesial plane, its highest point being far posteriorly; but as it advances it slopes downward until it imperceptibly blends with the osseous septum, which has displaced the intermaxillary bone. This raphé is the undeveloped, ossific centre of the vomer.

The contour of the upper jaw in these cases is strikingly similar to that which appertains to the lower animals,—*i.e.*, from the canine fossa backward, on either side, the alveolars are wanting in an arched direction, and occupy a horizontal plane. The central and lateral incisors, when they come forth, project far forward, taking a direction at a sharp angle with the lateral segments of the normal arch (this is the permanent intermaxillary bone of lower animals).

It will be always observed that the borders of the palate, alveolar and labial, are always greatly thickened, but very elastic and highly vascular. This intermaxillary bone is one of great interest to the surgeon when its distortion constitutes an important part of the deformity in hare-lip. It contains four teeth-follicles, for the central and lateral incisors, and is intimately attached to the vertical wedge of the ethmoid. It is almost invariably crowded forward or is rotated on itself.

THE CAUSES OF HARE-LIP.

In twenty-one of the cases of hare-lip which have come under my observation in my own practice and that of others which I have carefully examined into, there was in nine a well-marked element of heredity, while

in twelve maternal impressions were undisputed. In twelve other cases both of these etiological factors were wanting, and neither parent could in any way account for the deformity.

This makes a total of thirty-three cases. In seven of these, or nearly twenty per cent., the mothers had previously borne children similarly deformed. In ten cases the cleft was double; in twenty-one single. The breach extended through the hard and soft palate in twenty, or nearly two-thirds.

Of the nine hereditary cases, on either the maternal or paternal side, in near or distant relations, this affection had been noted.

Maternal impressions as an etiological factor have been denied; however, it must be admitted when the evidence of it is direct and unequivocal, as it was in twelve of my cases. So strong was this impression in two of the mothers that they both declared, before their infants were born, that they were positive they were "*marked.*"

Since I have taken an active interest in the study of the history of these unfortunate cases, and devised a method for their relief, which answers well in my hands, many cases have come to me which had already been treated, and a few of a minor description have been sent to me, the parents of whom refused interference.

The great preponderance of my cases was in the male, there being but six out of the thirty-three females. Anatomically, the deformity is caused by defective development. It is known that the face and its osseous framework are originally formed by symmetrical centres. These, during intra-uterine life, by a process of centrifugal growth and development, have coalesced or fused together.

The arrest or imperfection of this process of evolution is what constitutes the essential character of hare-lip,—cleavage of the lip, gum, or palate. It is unusual, if ever, that there is actual loss of the essential histological elements, though there are evidently atrophy and interstitial changes in the undeveloped parts. The human body does not undergo complete development until the twenty-fifth year. In other words, the process of evolution is progressing steadily and almost imperceptibly from the moment of impregnation during this long period.

As the teeth are called into action in the movement of the jaws in mastication the alveolar process is crowded forward, so that in cleft gum or palate the dividing gap is progressively narrowed as age advances.

The undeveloped vomer descends in those furrowed palates, and the roof of the mouth becomes so sharply arched or vaulted that, with the lowered nasal septum, the floor of the nares is formed, and, finally, the cavities of the mouth and nose become independent and separate.

If, then, in these cases of double hare-lip, associated with single or double cleavage of the oral vault, provided the intermaxillary bone be preserved and properly manipulated, we should not despair; for, by combining judiciously osseous operations on the deformed framework with plastic meas-

ures, the most unsightly of them may be so remedied as to efface the most obnoxious features of the deformity and restore the parts to their proper functional integrity.

It is of infinite importance that this property of the tender immature structures be properly understood and utilized when treatment is undertaken.

SURGICAL TREATMENT OF HARE-LIP.

Very much has been written on this part of the subject, the principal conflict of opinion being with regard to the age most appropriate at which active surgical measures are permissible. Many distinguished authorities argue with considerable force against operation before lactation is terminated and the full set of temporary teeth have appeared. To begin, they allege that, with or without operation, a large number of these cases die at an early age, probably under the second year. They claim the feeble organization of the infant is unable to endure the shock of operation, the loss of blood, etc., and that surgical intervention necessarily interferes with or causes the entire discontinuance of suckling the infant at a time of life most perilous to its existence.

My own preference is for an early and radical operation in every case in which the infant is free from organic disease. I have operated on infants from three to ten days old, and the younger the infant the better have been my results. Hence I advise operation at the earliest possible date,—on the day of birth, if possible. But they tell us so many die early. This is an undisputed fact: that few hare-lip babies survive long. But they often die of starvation or malnutrition mainly. It does not seem clear that an operation skilfully performed should shorten their lives. Conceding that operations tend to shorten life, the cosmetic effects which they produce are most gratifying to the parents, and a repulsive deformity is removed. One great though indirect advantage in the early operation is the removal of a blemish which is very liable to reproduce itself on the mother's next born, if the child is daily under her eyes when she conceives or is pregnant with another. In six cases which came under my notice or treatment the preceding infants born of the same mothers were afflicted with cleft-lip. In no case in which early intervention was invoked was the deformity reproduced in succeeding births. Nursing must temporarily be suspended in all cases, but not lactation. In all my early cases the mothers resumed nursing at intervals from a week to ten days. In one trivial case there was no break whatever required, the infant seizing and emptying the nipple, without any apparent pain, on the evening of operation. In all cases which admit of it the infant should be trained for two or three days before operation to take the breast-milk from a teaspoon. Then, when the operation has been performed, the mother should daily keep the breasts emptied by the pump and feed it to the infant. This plan has been found to work admirably, in my hands, in suckling infants. It is of fundamental importance, in every case,

that the infant's nutrition be well maintained, for without this all our best-directed efforts will have an abortive effect and end in failure.

As to mechanical or manipulative measures, in my judgment, to wait until dentition is over and the alveolar structures have solidified is to let pass that stage during which it is possible to easily, rapidly, and safely restore the continuity of the alveolar arch and give the descending teeth such an inclination or direction as will restore harmony of outline. While the bones are soft, cartilaginous, and flexible, restoration to position entails no loss of blood or crushing of bone. Besides, the effectual restoration of the superior dental arch relieves, to a very large degree, the tension on the soft parts, and thereby simplifies the plastic part of the operation.

Indeed, osteoclasis is the key to the operation in every complicated case of hare-lip. Shortly after birth it is simple and safe. After dentition, under the fourth year, it is difficult; later, it is quite impossible.

In simple, uncomplicated cases any tyro may successfully treat them at any age. But with those cases involving the bony element operative measures should be seriously deliberated on before we interfere.

There is another consideration which should influence us in every description of this deformity to operate early,—viz., the effect on the child itself. Allow the condition to remain until the age of reason is attained, he becomes conscious of his hideous deformity, and, having a sense of pain and suffering, he is much more intractable than when taken in hand before he is familiarized with what surely is in store for him in the way of physical sufferings.

It has been noticed that the oral and nasal cavities, with the osseous architecture of the head and face, develop from centres, and that this process of evolution is continuous until the twenty-fifth year; and it has been seen what nature will strive to accomplish in the way of adjustment in those cases of congenital cleavage.

Now, in the treatment of complicated cases of hare-lip, as with club-foot or other deformity, if we take it in hand early, before the bones solidify, and so replace and *retain* the disordered anatomy by art, as the body develops the deformity becomes practically obliterated. With the widely-separated borders of the gum forcibly brought and held together, they solidly fuse; the teeth fall into their proper position; the nasal secretions are discharged through their proper channels; the walls of the palate are fixed and supported, and, in a general way, everything, so to speak, has been given "a proper start on the right track."

Although very early age is preferable for operation for hare-lip, yet it is possible, in the majority of young children, to secure very good results, though they are advanced beyond the time of selection. Many circumstances may prevent parents living in the country from coming to a city for special treatment of their young. The mother may be in ill health. They may live at a great distance and find it inconvenient, or attended with risk, to start on a long journey in inclement weather. The infant may have

developed some intercurrent disease which may run a chronic course. With these much can be accomplished, though an operation on them is always more difficult, owing to the ossification of the parts and the greater difficulty in effecting complete replacement.

THE TECHNIQUE OF OPERATION FOR HARE-LIP; THE MANAGEMENT OF CASES.

Cases of hare-lip are not appropriate for hospital treatment. They may be operated on there, but proper after-treatment, in the general work of a hospital, is impossible. This, of course, is not the case if a private room can be secured and sufficient attendance can be obtained. One nurse is scarcely enough to give a case of this description ample attention during the first week. In a large measure the success in a given case depends on the care it receives during the first few days after operation. No nurse, however highly trained, can take the mother's place here.

The rules so admirably laid down by the late Mr. Butcher,[1] of Dublin, are, on the whole, I am convinced, the soundest that I am acquainted with on the question of technique in these autoplastic operations on the jaw and lip. He always operated with the child in a strait-jacket, held firmly in the hands of a nurse. He employed no anæsthetic, and always, after the operation, kept the patient well under an opiate during the first forty-eight hours.

For some years past I have employed a technique which, it seems to me, includes all the advantages of Mr. Butcher's and other operators' methods without some of their drawbacks.

There are five cardinal essentials which must be minutely and completely observed in the technique of all operations for complicated hare-lip. They are anæsthesia, asepsis, hæmostasis, osteoclasis, and utilization of tissue.

ANÆSTHESIA.

Ether anæsthesia is always the safest. While chloroform is taken with less resistance, and is much easier to administer in these cases, its after-effects are bad in many very young babies.

ASEPSIS.

We should always aim in every case to secure primary union. This is impossible if the wound becomes infected and suppurates; hence instrumental and personal cleanliness, as well as the most rigorous cleansing of the tissues about to be attacked, must be insisted upon. We are operating in a locality in which from the buccal and nasal secretions a wound is peculiarly liable to become fouled if extra precautions in this respect are not observed.

---

[1] Butcher's Surgical Commentaries, p. 207.

HÆMOSTASIS.

Considerable loss of blood is a double evil here; first, in entering the air-passages and exciting a broncho-pneumonia, and, secondly, in producing mortal anæmia and shock. By the employment of the temporary transfixion ligature over the coronary arteries, and by being careful to secure all small vessels as they are divided, the operation may be made practically dry and bloodless, and its performance much accelerated.

OSTEOCLASIS.

The bending or breaking of bone by digital or manual pressure, in effecting reposition or readjustment in clefts through the bony structures, is one of the most important steps in the operation. I have never had a case in the young infant in which I have not been able to crowd the alveolar arches into place by firm, steady pressure with the hand.

This must be done thoroughly, so that the deep wire girders, which hold them in position, may not be put on a strain, and thereby set up necrosis or ulceration.

UTILIZATION OF TISSUE.

It is important to sacrifice no tissue whatever, if it is possible to avoid it. To cut out wedges of tissue may give an immediate better shape to the lip before union is complete, but it is always followed by a severe tension and dragging on the cicatrix, which will seriously interfere with speech, and impede jaw-action in the mastication of food. Hence the line of incision through the lip should be through the vermilion border, close to the integument, each being sutured separately with deep silver wire passing from side to side. Sterilized silk sutures are preferable for the periphery.

GENERAL CONSIDERATIONS ON TREATMENT—STEPS IN OPERATION AND FINAL MANAGEMENT OF CASES.

Two assistants with some one to hold the patient are ample,—one to give the anæsthetic and another to prepare the instruments. As we are operating on the open mouth, it is evident that anæsthesia must practically cease when the steps of the operation commence.

The operation may be divided into three stages: the first, osteoclasis, or osteotomy; second, preparing the edges of the divided lip or lips for final plastic approximation; and, thirdly, the insertion of the sutures.

When everything is in readiness, the child held in the upright position, —never on the back,—in cases confined to one side, the operation may be rapidly performed. The most absolute immobilization of the head and jaws is imperative in all cases. It is well, after the completion of each stage of the operation, to rest a moment while fresh ether is supplied and bleeding is controlled.

The adjustment of the sutures, their introduction into the soft, tender tissues of an infant, is a task requiring judgment and tact. The silk must be

introduced so far from the line of incision as not to cut through, and be tied sufficiently tight to maintain perfect adjustment, yet not strangle the tissues which it embraces.

In all cases in which the labial muscles produce much tension on the sutures, they must be freely divided subcutaneously; for, in order to secure primary, complete union the edges must be wholly relieved of tension.

In cases of double hare-lip, if it were not for the anæsthetic, it would be better to divide the operation into two sittings. But the repeated saturation of the circulation within a short interval is dangerous to the child. After all the sutures are applied, the two or three deep shotted silver wire sutures should be fixed, then we may carefully close in the integument with very fine silk, with a continued suture down to and around the curved border of the lip.

Now adhesive plaster is applied, and permanent dressings over all.

As soon as the child comes out of the ether, a dose of laudanum should be administered and continued with sufficient frequency to keep up a moderate stupor.

At the end of forty-eight hours we should commence to remove the superficial sutures, and discontinue the opium in full doses.

I do not remove the deep cutaneous wire suture for a week. These girders which hold the bone are allowed to remain from three to four weeks, until thorough ossification has occurred.

Now, all this time the infant demands the unceasing attention of some one night and day.

Many of my cases failed to become quiet under safe doses of opium, and were comfortable, the first two or three days, only when carried in the arms almost incessantly.

When proper care is obtainable, and the operation has been skilfully performed, our labors are, in most cases, rewarded by a handsome transformation, and the little patient will carry through life the traces and impress on his features of what may be accomplished by the advancing art of surgical science. Unhappily, some will die at that stage when the cure of the deformity seems almost complete. This is the saddest side of the problem, and is most discouraging to the operator. But, as our opportunities for experience advance, we will learn how to avert the dangers which so often lead to a fatal result.

REPORT OF CASES.

The patient represented in Fig. 1 was born on a Sunday night, and was photographed and operated on on the following Wednesday, thus being but three days old.

It will be noted in this instance that the cleft is on the left side, and opens freely into the nostril. The cleft extended backward into the roof of the palate fully three-quarters of an inch. The intermaxillary bone was so rotated on its axis, in an upward and inward direction, as to firmly close both nostrils. The two central incisor teeth had fully erupted.

With this infant, my first move was to do an osteoclasis on the divided alveolar arch; refasten the borders of the gum and retain the sundered bones in position

with heavy-shotted wire, the smooth, free loop of wire remaining immediately under the mucous surface of the lip, while the compressed shot-clamps were lodged behind the gums in the mouth.

FIG. 1.

Before operation.

FIG. 2.

Three months after recovery.

This manœuvre at once secured a symmetry of outline and obliterated the snout-like deformity; and, besides, so replaced the soft parts that their apposition and retention were very simple.

Recovery was uninterrupted and rapid. The result here was all that could be desired. Not only is normal symmetry of outline well restored, but the gap through the palate behind the gum was in six months solidly united.

CASE OF HARE-LIP, CLEFT GUM, AND COMPLETE CLEAVAGE THROUGH HARD PALATE.

The second infant (Fig. 3) was brought to me from King's County, New York. She was just five days old when first photographed and operated on. This unfortu-

FIG. 3.

Photographed with mouth closed.

FIG. 4.

Same case with mouth widely opened.

nate infant, as is seen (Fig. 4), was horribly deformed. The cleft extended so far backward that, the support of the nasal septum being gone, the body of the nose had fallen in and flattened out.

The right lateral segment of the jaw, with the intermaxillary bone, was so far displaced as to leave a wide breach. The right nostril was blocked by the everted gum, while the left was widely separated and opened through by the same common breach. It would seem, on first glance here, that the right alveolar process only remained. As we look into the mouth we can see the immense cavernous space which opens into the nasal cavities.

This patient was treated on precisely the same lines as the preceding. To attempt any description of plastic operation on the soft parts in this class of cases without, as a preliminary measure, securing full osseous restoration is worse than folly.

Fig. 5.

Same case six months after operation.

At this time the infant is hardy and vigorous. There is no tension on the upper lip, and the furrow through the floor of the nares is reduced already to nearly half its former width. I may say here that a uranoplastic operation should never be undertaken in an infant. For, if we wait until the ninth or tenth year the fissure will have so far narrowed as to render the prospect of success very much greater after operation; besides, the patient is now more tractable, and can assist us.

The little patient shown in Fig. 6 came to me from Port Jervis, and was referred to me for operation by Professor Jarvis, of New York.

He was then six months old; active and hearty.

His deformity, as is seen, was not of a very repulsive character; yet its anatomical basis was such that it rendered the first step of the operation one of con-

Fig. 6.

Before operation.

Fig. 7.

Six months after operation.

siderable difficulty. One might suppose that the simple snipping away of the intermaxillary bone, which forms a sort of nipple-shaped protuberance, would much simplify the plastic operation. And so it would, but this insignificant-looking thing contains the follicles for four teeth,—all the incisors.

This is a case of double cleft, each extending back through the gum, the hard and the soft palate. The perpendicular plate of the vomer descends far downward and forward, in such a manner as to thrust this primitive centre far anterior to the line of the alveolar arch.

Each border of the gum on either side comes flush up with the innermost border of the intermaxillary.

Operation was commenced in this case by removing a large cuneiform section of the displaced ethmoidal plate. This permitted the crowding backward of the intermaxillary segment. When the bones were firmly wired in position, the plastic part of the operation was completed with no difficulty.

The mother and patient left New York for home three weeks after operation. One year later I saw him, when he was commencing to speak. The double clefts in the hard palate are narrowing, and in time, with a little surgical aid, they can be entirely sealed.

This little fellow, six months old (Fig. 8), was sent to me by Dr. Lamorees, of Highland, New York.

He was a pale, emaciated little one, of a violent temper and a restive disposition.

Fig. 8.

Before operation.

Fig. 9.

After operation.

The deformity was identical with the former. I attempted to deal with him, after operation, in the general ward of my hospital service; but he cried almost incessantly, was lonesome and could not be consoled. In order to secure any sleep, opium had to be freely administered. But one side healed by primary union, and, having ineffectually attempted to seal the other by three different operations, which all failed, I sent for the mother; gave him two weeks' rest, and by another operation and ceaseless attention, the other, the left side, was closed, by an abundant scar-tissue. He went home with the mother, three weeks after her coming. A year later, he died.

Fig. 10.

Before operation.

Fig. 11.

Two weeks after operation.

This infant (Fig. 10) was operated on when three months old.
The cleft was through the gum and lip only.
The usual measures were instituted, with prompt reunion in ten days.
The mother continued nursing him every day.

The accompanying cut (Fig. 12) was sent to me of a case which occurred in the practice of Dr. Richard Forrest, in Rockland, Massachusetts. I was unable to treat the case, as he soon after birth developed broncho-pneumonia and died.

Fig. 12.

Double complete cleft.

In this case it looks as though the intermaxillary segment had grown directly from the tip of the nose. It is lifted so far forward as to make the closure of the mouth impossible. Being born in the cold, harsh weather of March, it is probable that this was an active factor in the causation of the fatal pulmonary disorder.

The following photographs (Figs. 13, 14) have been kindly sent to me by Dr. W. Judge, of Belle-Plaine, Kansas.

They illustrate the varieties of deformity associated with hare-lip.

The lad is six years old.

You will notice that the breach in the lip is very slight; that, though there is an arched opening through the dental border of the gum, the bony ridge is intact.

Fig. 13.

Fig. 14.

Don Snider, four years old, October 8, 1892.

The photograph with the opened mouth beautifully exhibits the wide breach through the hard and soft palate.

The next and last three cases are all interesting; but I am sorry to say that none survived three months after operation, though in every case union was rapid and solid.

The patient represented in Fig. 15 was sent to me by Dr. George D. McGauran, of New York.

Double-cleft through and through.

Usual operation, with primary union.

Three weeks after operation he developed diarrhœa and died.

The patient shown in Fig. 16 was sent to me by Dr. James Moran, of New York Unilateral cleft through gum and palate. Union complete, and entire recovery from hare-lip operation, when he developed meningitis and died.

Fig. 17 was another case of Dr. Lamorees, of Highland, New York.

Unilateral. Usual operation.
Osseous and plastic operation entirely and rapidly successful.

Fig. 15.

Patient one week old.

Fig. 16.

Two months old.

Fig. 17.

Patient four months old.

The sutures had all been removed, except the two deep ones which occupied the gums, when two weeks after operation he acquired measles and succumbed.

PNEUMONIA AS A BLOOD-DISEASE.[1]

BY EPHRAIM CUTTER, M.D., LL.D.,
New York.

The writer has had practical experience in the most trying cases of pneumonia. He has treated them in his own family. He has learned that it is a common sentiment in Suffolk County, Massachusetts, Tolland County, Connecticut, and elsewhere, that death follows, as a matter of course, in all adult cases of pneumonia. Hence he thinks there is need of all the light possible to be shed on the treatment of pneumonia, not only to maintain

[1] Written for the American Medical Association, 1892.

the reputation of the profession, but for humanity's sake, particularly as cases of the gravest type have been cured by active, positive treatment. The question is, Must we follow conventional treatment and let the cases die, or may we cure them unconventionally?

When my wife had typhoid pneumonia, I bled her. So long as she lives to bless my life, I am satisfied. People must remember, as President Dwight, of Yale, lately wrote, that "our fathers knew something, if they did not know everything." Those, like Dr. Hiram Corson, who know or think they know of good remedies for the treatment of pneumonia have a right to speak.

I am thankful that he has spoken his most remarkable, clear, pointed, terse words, bristling with facts which are eternal. When such physicians as Professors S. D. Gross, H. H. Smith, and R. J. Levis, and bishops like Vinton, of New Jersey, have died of pneumonia without active treatment, while the advocates of cardiac sedation have stood at their bedsides, it is time to speak out. Severe cases need severe treatment. It is proposed to show that the blood is the great element in pneumonia, and that when sedatives fail, depletion, which most directly affects the blood, should be used freely and at once as the best and promptest means to relieve the lung-congestion, which is the first stage of pneumonia, and complicates the other stages, and to relieve the intense local action which physicians of all ages compare to a fire and call "inflammation," but which is not explained by congestion alone, as it occurs without inflammation in vivisection experiments.

What is Pneumonia?—Better terminology calls it pneumonitis, and best colloquial, lung fever. For our purpose the fine distinctions of lobar, lobular, bacillar, catarrhal, croupal, typhoid, etc., are merged into one head,—*i.e.*, an inflammation of the lungs, usually caused by taking cold, which has four stages. First, congestive; second, infiltration; third, hepatization; and, if recovery follows, fourth, resolution. It is a very active disease, apt to spread, and needs the closest watching, as the stages may follow each other with intense rapidity, and sometimes occur all together. It is best treated in the first stage, even if complicated with other illnesses or disease, and to the first stage these remarks are especially directed.

Why Pneumonia is a Blood-Disease.—In the words of another, "It is always preceded by an abnormal blood" in which the red disks are sticky, adhesive, aggregating into masses and ridges or windrows very much as in rheumatism.

The white corpuscles also stick abnormally together. The fibrin filaments, normally fine, subtle, and minute, are more numerous, thicker and stronger, and enlarged, thus retarding the flow of the blood, especially whenever there is a narrowing of the capillaries by the outside application of cold, commonly called "taking cold." The serum is more or less filled with abnormal bodies, as crystals, pigment, thrombi, etc.

When it is considered that the lungs are made up of very elastic and

spongy tissues, which are contractile to cold, it is easy to understand why, when the body surface is chilled, the abnormal, sticky, and adhesive blood will be arrested in the contracted capillaries of the lung, when the normal blood would not. This is more apparent when it is considered that the leeway for an average red blood-disk in man is only one forty-eight-thousandth of an inch. If the normal red blood-disk will flow through the capillaries, abnormal blood must flow with more difficulty, as molasses flows with more difficulty than milk, and would be arrested more than milk by any narrowing of the tubes conveying it. To repeat, normal blood will not congest the capillaries like abnormal blood, as above named.

As already hinted, there is a local action in the lung-tissues, probably of sticky epithelia, which helps to detain the blood and causes a part of the elevation of temperature after the chill. Probably the same cause which has made the blood abnormal also acts to render the epithelia abnormal.

The elevation of temperature called "fever" may be and probably is due to nature's efforts to expel the diseased condition, added to internal intrinsic qualities we cannot explain.

One observer thinks, as already hinted, that the fever is due to the resistance of the epithelia lining the blood-vessels, which epithelia are automatic, and resent the checking or abolishing of their functions by the congestion of the lung capillaries. I am inclined to hold this view, since epithelia play such an important part in the human system, and manifest an autonomy,—*i.e.*, in secreting wax, bile, milk, etc., with a protoplasm seemingly alike in the wax, bile, and milk epithelial cells.

Second Stage—Infiltration.—Here the blood-lymph is poured out from the lung capillaries, filling out the air-cells, and coagulating in them, thus preventing hemorrhage and destroying the functions of the lung-tissues invaded.

Third Stage—Hepatization.—Hepatization is the completion of the infiltration stage, and the lung is solid like liver, as shown by percussion and auscultation.

Fourth Stage or the Stage of Resolution.—Here the softening process begins and is carried out to health, unless arrested. Sometimes in this stage the impression is given to the ear as if a boy was splashing in "slosh" (snow and water about equally divided in bulk) with his rubber boots, and yet the resolution in one case was so splendidly carried out that normal respiration was restored! It seems incredible that a lung should be so soft and sloshy in texture, and yet have those apparently broken-down textures normal once more. Yet this is nature's fine work aided by depletion, good feeding, good nursing, and (shall I say it?) good medical attendance!

I have seen the right lower lung lobe inflamed and resolved; next the second and third lobes successively follow, and recover one after the other. This shows that congestion may complicate the other stages, and its need of treatment. It is impossible to separate the second, third, and fourth stages of pneumonia from the blood as a powerful and indispensable agent.

So also when suppuration and abscess are formed in the lung from the accumulation of white blood-corpuscles infected with bacteria, it is a blood work, as the white corpuscles come from the blood directly through the stomata of the capillaries. If the pneumococcus diplococcus lanceolatus capsulatus of Professor W. H. Welch, as found by him in the blood, is adopted into the family of causal baby vegetations, we will have small reason to ignore the adult vegetations with all their poisonous products.

THE HEART AND PNEUMONIA.

As the heart pumps blood, and without blood there is no pneumonia, then the heart's relation to pneumonia must be close. Indeed, the conventional treatment of pneumonia by cardiac sedatives is based on the idea of lessening the power and quantity of the blood forced into the lungs.

Late observers report that the heart does not throw off so much blood when it beats fast as when it beats slow. It may be so sometimes, as the heart can begin a beat before the blood is fairly out; but in a case of pneumonia (in which the above savans did not experiment), it must throw out more blood, or expel with more force, as shown by the increased strength of pulse, the hæmal excitement all over the body, and the subsidence of the force and frequency of the pulse and of the fever heat (and shown also by the relief to the breathing and the feelings of the patient) after depletion.

The Heart is Autonomic.—This appears from the following facts: 1. I have seen a turtle's heart beat for twelve hours after complete separation from the body. 2. It has enough ganglionic nerve-centres of its own for autonomy. 3. The Bible makes over nine hundred references to the heart as an autonomic, independent nerve-centre. As we say the brain "cerebrates," so I think that the heart "cardiates." It beats harder and faster in pneumonia, I think, as the heart knows at once the need of beating harder in order to save the life of the body systemic, just as when it does so in the ascent of stairs, which, at a moderate estimate, takes four times the dynamos or force that is needed when locomotion is made on level ground at the same rate of speed. Is it not the best way to remove the need of this extra work rather than to paralyze the heart with sedatives? While I was advocating the use of veratrum viride in an Edinburgh hospital, Professor W. T. Gairdner, LL.D., accosted me and questioned me with all the acuteness of a Philadelphia lawyer. He said that he would strengthen, not weaken, the heart in pneumonia, when it was doing all it could to keep the patient alive. This was a sedative to me then, but now I believe it is the right principle. Increase the work of a steam-engine fourfold and at the same time dampen the fire under the boiler, would you not violate the ethics of steam-mills? To be sure, as hinted above, the diminished lung-space does not always cause the increased frequency of pulse. I once had a patient whose heart beat normally when one lung was entirely obliterated by tubercles, as shown by the autopsy. Professor Welch showed that tying up a rabbit's lung did not accelerate the pulse.

Again, the hæmostatic pressure of the blood is like the hydrostatic, and uniform at the rate of three or four pounds to the square inch, as shown by Dr. Dawbarn. If the phenomena of lung inflammation were produced by the heart-pressure alone, then the rest of the system should be inflamed, as it receives the same pressure. In my opinion, the frequency of the pulse in pneumonia is best reduced—as experiments for years have shown—by diminishing the quantity of the blood in the system. It was quickest reduced by stopping galvanism in a case when I was passing a current through the abdominal walls by needles penetrating deeply into the substance of a large uterine fibroid. The pulse was 90, if I mistake not; removing the current, almost immediately the pulse fell to 80, the normal female standard, with a loss of ten beats. Professor H. M. Field, then of Dartmouth College, was present, and remarked that he knew of no agent of the materia medica that would so quickly raise the pulse, as this did repeatedly under our observation, from 80 to 90.

There is no analogy here to a pump in a well, as the blood flows in a closed circuit everywhere. Take away a pint of blood from the full circulation and you diminish the pressure, as we reason. Some one should test the pressure of blood in the femoral artery with a hypodermic syringe before and after bleeding in pneumonia. It is a harmless procedure, and would be worth more than words.

Drawing the Blood to the Surface in Pneumonia.—It is rational, if pneumonia is caused by driving in the blood from the surface by cold, that efforts are made to bring the blood back to the surface. Indeed, this is what happens in lung-fever, and is one of nature's efforts to cure,—as she always tries to cure any disease, as a general rule, if there is vitality enough left. Hence the use of mustard, turpentine, chloroform topically and by inhalation, hot baths, etc. The inhalation of ether, if taken soon enough, will send the lung-congesting blood back to the surface. So will rubbing or massage, hot drinks, emetics, sweating, and such like. We have referred elsewhere to the ligation of the lower limbs so as to detain the venous but not the arterial blood, and those who have not the courage to bleed had better try this, by all means. The principle in these procedures is the returning of the blood to the surface. But depletion is the most efficient.

Results of Depletion.—Suppose one pint of blood be drawn, some of the results are as follows:

(*a*) An incalculable number of red disks are removed. Late estimates give five million to a cubic centimetre of blood.

(*b*) White corpuscles, one to three hundred in a cubic centimetre (or, by later estimates, one to about fifty red cells), are removed.

(*c*) Serum is also removed.

(*d*) The pressure is taken off the lung capillaries, which must be weakened, else they would resist the blood-pressure like the capillaries elsewhere, and preserve their functions.

(*e*) The blood is thinned because the loss by bleeding is replaced by

serum, probably. Hence less friction in the circulation, and the force required of the heart to keep up the circulation is lessened.

This relief is better understood when it is considered that a moderate estimate makes the length of the capillaries in an average adult man to be over one hundred thousand linear miles, could the capillaries be put in one straight line.

How Depletion Helps the Cure.—It is work to live in health. In pneumonia it is more work to live because of the extra friction. Life here includes, besides the dynamos or vitality to keep up being, force to cure, as nature has to use force to heal a wound or a fracture. But if she has not force to heal these lesions, the work is done partially or not at all. Take an illustrative case from surgery. A woman who was a tremendous worker, and had a large family, fractured the olecranon process of the left ulna. In spite of orders she worked. The fracture did not unite. One day I caught her putting clothes into a wash-boiler on a hot stove. I said, "Just so long as you use your force to do work your bone will not unite, as the force needed is used up in washing." She saw the point, gave up work, and the bone united. This principle is recognized by all physicians who put their patients to bed. Rest produces dynamos by saving it: no matter what the treatment the force saved is the great agent of cure. Depletion helps to cure by saving force in running the heart, in assisting difficult breathing, in lowering the temperature, in mitigating if not entirely relieving the suffering, etc. Often this procedure saves the patient from death. Pneumonia sets the system running wild, like a runaway locomotive or horse. Force is lavishly, extravagantly, heedlessly thrown away, and, if kept up, exhausts itself by overdoing. Depletion stops all this, and makes the system run more moderately and saves the force for cure. I hope this is clearly understood in pneumonia.

Why is Depletion not used more in Pneumonia?—A frank answer is, Because public opinion is against it. This opinion has been fostered by the eclectic and homœopathic practitioners, whose influence, if we can judge from history, has caused pneumonia to be looked upon as a most deadly disease. Public opinion is against depletion, mainly "because it weakens the patient, adds to the dangers of the case by withdrawing 'the life' of the body, and untold mischiefs result, if not death."

The shortest answer to this is that cases of pneumonia have promptly got well after depletion was used, not abused. Again, it is not true that loss of blood always destroys life or impairs health. Women at childbirth, with placenta prævia, abortion, uterine fibroids, etc., flood terribly, and survive it all. Nosebleed, severe hemorrhage from the lungs, bowels, teeth, and varicose veins, dispense with more blood than depletion properly does, but, if I can judge from my own experience, it is rare for death to follow. Indeed, nasal hemorrhage is sometimes a safety-valve for the brain, and has often relieved an excess of blood in the head. It seems a bad rule to entirely prohibit depletion for everything. One instance will suffice.

A family who were homœopaths had a babe, about twenty months old, who fell backward in its high chair on to the floor and struck the occiput. After a few days the child screamed with pain; had high fever, head very hot; lay in convulsions insensible for seven hours or so. I was called to the case. I confess that, through fear of conflicting with family opinion, I did use sedatives—all to no purpose—for six hours. I then told the parents that I would use leeches if it was my child. They said, "Do as you please." The leeches were applied to the head. As the blood was removed the progress to relief was very clear, marked, and in direct proportion to the amount of blood taken away. The recovery was perfect, and the child, now a woman, is a teacher in San Francisco. I believe she would have died, for the reason that an infant cousin of mine, eighteen months old, had a like fall on its occiput, was treated by one who never bleeds, and died in twenty-four hours! Doubtless depletion has been abused, but abuse is no argument against use; for on this principle there would be no mothers in God's appointed wedlock, because there are women abused in social vice. Just as reasonable would it be never to drink cold water because people find it to be unhealthy to be submerged for ten minutes under water, to never use a fire to cook with because it has burned cities, or not to use fresh air legitimately because careless and naked exposures have caused pneumonia.

Dr. Benjamin Cutter (who died in 1864) used to say that there were times in the practice of medicine when powerful measures must be boldly used to save life, and that the great skill of the physician lay in detecting those occasions and promptly improving them. Pneumonia was one of those cases. I have found my father's dictum to be correct.

Professor R. H. M. Dawbarn has written a most interesting pamphlet on medical hemorrhage surgically treated. It is about the effect of blood-withdrawal from the lower extremities by compressing with tourniquet or windlass. He finds the blood-pressure lessened in the arteries, and advises this method to control the further effusion of blood in apoplexy. This is done in fainting by lowering the head. The blood gravitates to the cerebrum, which relieves the faint. It seems to me that those who are so fearful of letting blood might act on this suggestion of Professor Dawbarn, and report the results. No doubt it would answer in some cases.

As to Loss of Blood being Dangerous.—Professor Dawbarn says, p. 8, "It is wonderful how large a loss of blood may be survived, and how rapidly, as if by magic, nature supplies multitudes of new red blood-cells to replace those lost." William Hunter (*loco citato*) states that "after the greatest losses of blood in animals, a sufficient number of red corpuscles always remains to carry on the respiration, provided that the circulation is maintained. . . . I have observed cases of pernicious anæmia in which the red corpuscles may be reduced to ten per cent., or even less, of their original number. I have also observed cases in which the number of corpuscles were as low as five hundred thousand or six hundred thousand per cubic millimetre, instead of five millions, as in health; the respiration never rising

above twenty per minute, the breathing during quietude being perfectly tranquil throughout."

According to Clarendon, the historian, during the Revolution of 1645, a lean thin old gentleman was decapitated in Great Britain on the block, and but little blood flowed! If viability is as these last three statements, then depletion is not such an awful and dangerous thing as some make out.

SOME PRACTICAL POINTS IN THE TREATMENT OF PNEUMONIA.

1. From the foregoing it seems that the best way to prevent pneumonia is to *keep the blood normal*, so that it will flow through the lung capillaries even if the body surface is exposed to cold. This is best done by proper feeding, with plenty of water to drink to keep the blood fluid. Eat two-thirds by bulk of food from the animal kingdom to one-third of food from the vegetable kingdom. This is the best preventive medicine. Avoid fermenting foods of all kinds. Don't eat too much. Wisely expend all of life's forces. Thus pneumonia would be rarer.

2. As people will eat what they like without regard to its effects on the blood, we must take them as they are, and expect the blood to be abnormal sometimes, and pneumonia liable to occur; but even then it would not be so common if those with colds would go to bed and stay in a horizontal position (thus relieving the heart-work) where the temperature is uniform. The erect body is subject to different temperatures sometimes. I found once the temperature of a sick-room to be 16° F. colder on the floor than on the shelf of the mantle. The chest of an erect person in that room was in a temperature sixteen degrees warmer than the feet, and this difference would be enough to cause a fresh cold in one who already had one.

My wife found putting her children to bed when they had taken cold prevented pneumonia; would that we had learned this earlier!

It would be well for adults who have a great tendency to getting overheated and then chilled, and who usually have an idea of working off their colds by attending to business, but, instead, keep adding to the congestion by more colds until the first stage of pneumonia is developed, to "run away and live to fight another day." But it is almost impossible for business men to do this, not even when besought by their good wives and physicians who advise such a course. Many a wife has saved a life when her husband would mind her.

3. Another simple way to avoid congestion is by putting on more underclothes. I was once saved an attack when chilled by a sudden change in the weather away from home, in this way, though I had to buy underclothes on purpose. Or by putting over the chest folded newspapers to confine the warmth; or holding the breath as long as possible, which act drives the blood into the skin,—this is said from experience; or by singing a slow, pleasant air, which expands the lungs and quiets the sympathetic nerves which supply the lungs; or to exercise by slapping the arms briskly against the chest, driving the blood into the fingers so that they glow with warmth.

Many out-door workmen ward off pneumonia in this way. Or drink a pint or two of hot water, which is the secret of the good in teas or liquors; or use deep breathing through the nose to warm the air and expand the lungs. Probably this is one reason that keeps up the use of the so-called compound oxygen, as it causes the benefits of deep breathing. Or when caught in the *deadly spare-room* of the country home, which has slain so many good clergymen by pneumonia, pull out the sheets and lie between the blankets, which are non-conductors of heat, and cover the head and all until warm. It is wonderful what a furnace the lungs are. Once, when chilled, in a room with the temperature at 16° F., outside 25° F., below zero, I was thus enabled to get warm and ward off pneumonia. By long enough sojourn under bedclothes one can take a sweat; or, go before an open fire with its life-giving radiant heat. At the same time eat regularly plenty of good substantial food that is known to agree. Beef, mutton, eggs are the best animal foods, and whole wheat bread for vegetable food. The system needs more food-force in disease than in health, as it is harder work to "run the machine." All these measures affect the blood circulation and tend to divert it from the congesting lungs into the surface capillaries.

4. Suppose a case more severe in the congestive stage, in the chill and after, the inhalation of ether or chloroform in small quantities,—not to anæsthesia,—used both to relieve pain and drive the blood into the skin, I have found useful. In my own inhaler a tablespoonful of ether will last a long time. My wife used ether thus to advantage in typhoid pneumonia, being herself the subject. I think it may do away with the use of opiates somewhat, and thus avoid clogging the liver.

Mustard poultices or turpentine stupes or chloroform wet on cotton and held close to the skin for five or ten minutes, by the bottom of a glass goblet, are good to draw blood from the lung.

Dry cupping may be used. Emetics of ipecac, tartrate of antimony and potassium, and lobelia, all tend to diffuse the blood away from any congested centre. I am not partial to purging, though when the system has clogged the bowels it is a good plan to have them relieved.

It is always a good plan in pneumonia to stop all the leaks of vital force, as it is needed to cure. If the case does not yield, do not wait, but promptly use depletion by leeches or the lancet. I am convinced that the present mortality of pneumonia is due to the want of depletion.

5. *Food Treatment.*—The late Surgeon F. M. Dearborne, U.S.N., told me that he had eighty cases of pneumonia on board of a transport, with fresh enlistments, which sailed in the month of February, in our last war, during a cold snow-storm, which froze up everything on the surface of the ship. With a diet of beef combined with nursing, watching, and little if any medicine they all recovered but one. Here the principle was to fully sustain nature till she could cure the disease.

Always feed on beef in pneumonia. If the patients cannot swallow it in solid form give the liquid forms. Johnston's English bovril I have

found a fine preparation. Feed regularly if you can, irregularly if you cannot regularly. "*Beef is the only food an adult can live on indefinitely.*" I speak from long experience. Beef digests with a minimum of force, and supplies all needs as a general rule. Eggs and mutton may be substituted, but are not so good as beef.

I think many are starved to death in pneumonia on gruels and cereal foods.

The best poultice for pneumonia, in order to keep the chest surface circulation good, is the potato-poultice of the late Dr. Augustus Plympton, of Woburn, Massachusetts, who died in 1854. It holds heat longer, is more soothing and useful than any other poultice I know of. It is made as follows: Ten or twelve Irish potatoes are washed and pared; with a coarse grater the potatoes are reduced to a pulp, preserving the juice until enough pulp is got to cover the affected chest or part of the chest. The pulp is then placed in a common skillet over a brisk fire and stirred constantly until the juice is coagulated and the mass is so adhesive that the pan can almost be reversed without the poultice falling out. A piece of cotton cloth long enough to reach round the whole chest, with a lap-over, and wide enough to reach from the armpit to the edge of the ribs, is laid out flat on some support, and the cooked potato is spread on to one-half of the length of the cloth, leaving a margin all around. The cloth is then doubled on itself and the free edges stitched together. Apply the poultice as warm as can be borne, and keep in place by encircling the whole chest with a towel and pinning with safety-pins. At the expiration of twelve hours the poultice will turn sour and black. It should then be renewed, and kept changing until the lung has healed, and then its place should be taken by a piece of thick flannel, to protect the open pores of the skin and prevent taking another cold.

Spongiopilin may be used as a poultice, but it is not so good as potato. Potato poultices are specially good in the pneumonia of children. It is wonderful how much relief they give.

COMPLICATIONS.

La Grippe.—This is so commonly fatal that it deserves a notice here. In my opinion, grippe is mainly due to an infusorial parasite, the *asthmatos ciliaris*, detected by sputum inspection, which irritates and keeps up incessant and harassing coughing and does not allow of any rest to the inflamed lung-tissue. It makes a bad complication, as if the patient's lungs were irritated with needles or acid fumes. Some cases of grippe imitate pneumonia closely, but the absence of pneumonic physical signs differentiates. If the grippe complicates pneumonia it is of the utmost importance to treat it. This is done by the inhalation of the nascent chloride of ammonium, menthol, atomized benzoate of sodium (watery solution), burning sulphur, camphor, etc. An easy way to use the nascent chloride is to wet (as suggested by Mr. Hutchens, of New York, apothecary) a handkerchief with good hydrochloric acid, and another handkerchief with ammonia, and

wave them side by side in the room where the patient is. The nascent ammonium chloride inhaled will usually destroy the asthmatos and afford much relief and chance to treat the pneumonia. Besides, the nascent chloride of ammonium in uncomplicated pneumonia is an excellent remedy, especially in cases of infants and persons unable to swallow or draw the breath through a tube actively. The mode just described is termed the *passive inhalation*, and has saved pneumonia cases where otherwise it seemed impossible. *Nascent chloride of ammonium should be more employed in pneumonia.*

Fatty Degeneration.—Here the normal tissues are replaced by fat in some of its varied forms. Amyloid degeneration is one of the earliest phases. These complications masquerade under other names, as apoplexy, paralysis, hemiplegia and paraplegia, Bright's disease of the kidneys and lungs, heart failure, etc. These complications are very dangerous and fatal. So to speak, the soil is boggy and not a good foundation for treatment. Still, nature is very kind, and "while the lamp holds out to burn the weakest sinner may return." In other words, the physiological sinner who has got into pathological trouble because of his transgressions has, in the expressive words of another, "time for repentance and good works," though the chances are small. The physiological sins are: 1. The feeding too much on starches and sugars,—*i.e.*, carbohydrates. 2. The want of proper exercise. 3. Environment of the body by too tight ligatures in the clothing. These causes will impede the capillary circulation or render it languid mechanically and chemically (as fats are carbohydrates or closely allied to starches), and the gases, produced in the imperfect digestion and fermentation of the carbohydrate food, usually in large excess, paralyze the system more or less all over the body according as to where the weakness of organs happens to be. All *fermenting food should be avoided*, even the white fibrous tissue that goes with the lean muscular fibre of beef. All leaks of vital force should be stopped; even the prodigal waste of force in a congested lung, by depletion, if other things fail.

Heat and fever are results rather than causes, and are due to an increased action of the heart ganglia and the system, in order to repel the mischiefs of congestion, in my opinion. It is possible to have pneumonia without fever, but it is rare. It seems as if nature was roused to defend herself to such a pitch of excitement that she is set on fire and becomes almost wild. In the same way one might get feverish in working hard to expel an intruder from the home at midnight. No matter if it was midwinter, the process of ejection, if difficult and demanding much exertion, would be heating to the actors. When the intruder is removed the fever would subside of itself. In other words, while the heat and fever are parts of the pneumonia, they are not the main things, and will cease of themselves when the congestion of the lung is relieved. It is not then the wisest thing to remove the heat and fever by cardiac sedatives when the heart has to beat hard and produce fever in its efforts to maintain life. It is certainly wiser to relieve

the congestion and the fever. Depletion will do it, and so will other things, as proper feeding. This is shown by Dr. Dearborne's cases above given, and by the following instance of general fever without pneumonitis. Some years ago the late Dr. H. I. Bowditch sent me a young man with syphilitic inflamed throat and chronic bronchitis, having a temperature in my office of 104° F.,—the highest temperature I have seen in a walking patient. It seemed to me that his nutrition was at fault, so I put him on beef alone. *Within four days his temperature was normal!* This was done on Dr. Gairdner's idea of helping the heart and system by good feeding and putting in more dynamos. This point should be remembered in all cases of pneumonia, as good food improves the quality of the blood more than any other means known to me, and making the blood normal is the greatest step to restoring normal circulation in any congested part, simply by removing the adhesiveness of the red blood-corpuscles.

Veratrum viride and arterial sedatives are not so much demanded as I thought when, in 1862, I advocated the use of veratrum viride in Europe, and was successful in establishing its claims as an arterial sedative. In many uncomplicated cases of pneumonia it has answered well, but it is not good to depress the heart when it automatically works as hard as it can to save life. It is more philosophical to lessen its work, by removing the congestion, and thus quiet it without any drug sedation.

Conference of Force in Pneumonia.—This is a subject suggested to me by Dr. Gairdner in 1862. There is such a thing as conferring force or dynamos by presence, in contact or not, with one who has it to give. I think it is the chief thing in massage. Let a strong person grasp hands with a weak one, and the weaker one will be stronger for it, as a rule, with some exceptions. To illustrate: A lady went with another to call on a sick woman, who was hemiplegic and a stranger. The lady simply went as caller's companion, and sat silent for ten minutes at a distance from the patient. The latter said to the lady, "I feel better for your being here." With a view to help her more, if possible, the lady sat by her side and held the paralyzed hand. It was not long before the paralytic moved her paralyzed arm. She was able to move the paralyzed leg before the call was over.

Again, I think that successful physicians sometimes depend for their success on the power of conferring force,—unconsciously, it may be. This explains the hold that some practitioners, known to be unlearned and ignorant, have on their patients, and the ill success of some thoroughly qualified and profoundly learned physicians.

I learned this practically when laid up with a fractured patella. I suffered much with pain in the knee-joint, and found little relief from anodynes, which all disagreed with me. Sympathizing friends would come and ask to do something. "Rub the well knee" was the direction, and this rubbing would, as a rule, quiet the pain in the injured knee. Some would make it worse. This leads me to say that some persons will withdraw force and weaken the patient. Such are to be avoided.

This conference of force should not be neglected in pneumonia, and life may be saved by thus adding more power to the life-repairing forces. For, as one truly says, "It is nature that cures," even when depletion is used. This principle applies to all human interferences with nature. Let one illustration suffice. A ship is tipped so that its spars are in the water; sailors shift the cargo and the ship rights. They say "we have righted the ship." But it is also true that nature operated to right the ship through her law of gravity. Without this the sailors would have worked in vain. This part of our subject is very rich and deserves a paper by itself.

THE "INSTILLATION" TREATMENT OF GENITO-URINARY DISEASES.

BY FÉLIX GUYON, M.D.,

Professor in the Faculty of Medicine; Surgeon to Necker Hospital; Member of Academy Medicine, etc., Paris.

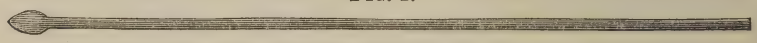
When the inflammatory troubles of the urethra and the bladder have resisted internal medication, it becomes necessary to resort to local treatment that will modify or heal the mucous membranes involved. Very many different methods have been proposed and employed to do this; among them are the injection of caustic, astringent, and antiseptic substances, or else the use of medicated sounds or bougies. Most of these cause an irritation of the healthy parts and act over too large a surface. The problem was then to find a means of limiting the action of the drugs used so that they would act only on the diseased parts. Lallemand, in 1825, invented his *porte-caustique*, but its action was so energetic that it was soon given up. Desormeaux afterwards with his *endoscope* found the exact spot, and cauterized it with small wads of cotton that were first steeped in a concentrated solution of nitrate of silver. This form of treatment was a tedious one, and required the operator to be not only a skilled surgeon but also accustomed to the manipulation of the endoscope, so that this method of treatment soon fell into disuse in general practice.

The "instillation" treatment of which we wish to speak was presented by me to the Société de Chirurgie in 1867, and has since been much used by surgeons. The instrumentation is not at all complicated nor costly, and should be in the hands of all. Any physician can do all that is needed without special instruction. The instillation treatment will be found most useful in posterior urethritis and cystitis. It allows us to act directly and easily on any one part of the urethra, and to place the drug used only on the point selected. It also permits us to measure the quantity of the solu-

tion used and employ it in the degree of concentration that we may desire. The apparatus used is very simple.

1. An olive-tipped hollow sound having a small orifice at its bulbed end, just large enough to allow a drop of liquid to pass at a time. The other end is enlarged to receive the nozzle of a syringe. These are flexible, and the numbers used are those from Nos. 18 to 22 of the Charrière scale for the anterior urethra, and Nos. 12 to 14 for the posterior urethra and the bladder. (Below is a model of one of these instruments. They may be coiled up for the vest-pocket.)

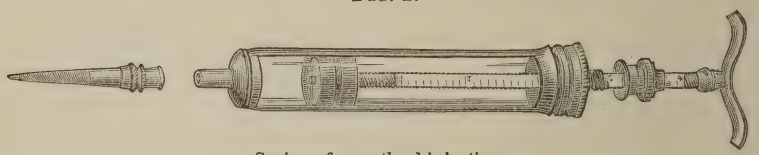
Fig. 1.



Olive-tipped hollow sound for urethral injections.

2. A syringe of the same model as the hypodermic syringe, but much larger, holding from two to four grammes (one to two drachms). The nozzle of this instrument has a thread on it to fit closely into the sound, and the handle is made to turn in the barrel and not to pull up and down as in the regular form.

Fig. 2.



Syringe for urethral injections.

The method of operation is as follows: Having seen that the syringe is in good working order, fill it with the liquid which it is intended to use, and adapt the extremity of the exploring sound to the nozzle by screwing it in tight. Turn the handle of the syringe until a few drops of the liquid appear at the point of the olive bulb, and notice that at each half-turn of the handle a drop of the solution falls.

First Case.—If you suspect or know that it is an *anterior urethritis.* (This is located most frequently in the bulbous portion, just at its junction with the membranous portion of the urethra.) You have only to introduce the olive-bulbed sound (bougie No. 18 to 22) until you feel it arrested at this point, then withdraw it about a half-inch, and turn the piston of the syringe so as to discharge five or six drops of the solution. This solution is held in place anteriorly by the sphincter of the urethra, and posteriorly it is kept in place by the olive-shaped sound and cannot get down to the spongy portion of the urethra and the meatus. Keep the liquid here for a few minutes, and then slowly withdraw the instrument, or, if you fear that too much has been used, loosen the top of the piston and draw any extra liquid up again. As a rule, only enough should be used, and then the sound should be slowly drawn away.

Second Case.—If the instillation is to be made for the posterior urethra, and you wish to act on that portion only, then allow a certain quantity of

urine to remain in the bladder, but if you wish to act on the neck or on the mucous membrane of the bladder itself, then have the patient urinate, or use a sound to evacuate all the urine in the bladder. Take an olive bulb (No. 12 to 15) and pass it back until you feel the resistance of the sphincter of the membranous portion of the urethra, push a little beyond this and instil the fluid. You may at once withdraw the sound, as the sphincter will close up and prevent any portion of it passing into the anterior urethra. In a woman the No. 18 to 20 is used, and may be passed up to the neck of the bladder and drawn back a little for instillations in the urethra, or else pushed on a little for instillations into the bladder.

Substances Employed.—These are of two classes,—*i.e.*, those intended to modify the mucous membrane or those which are used for preventing pain. These last are morphine and cocaine, and they only have a very slight action. The modifying drugs give variable results. Sulphates of zinc and copper—one in twenty or forty—produce a reaction in posterior and anterior urethritis, but this effect is not very durable. Iodoform, held in suspension by some solution of gum, is not even as good, and has been mostly abandoned. Nitrate of silver is a substance that has been very much used. We employ solutions of one in fifty or one in twenty, or even stronger,—gramme per gramme; but these very strong solutions cause a very severe reaction, and are followed by hæmaturia. Corrosive sublimate had been used before, but in much too strong solutions. Its proper strength is from one in five thousand to one in one thousand. It is best given with boiled water and not with alcohol. The number of drops must, of course, vary according to the fluid employed, and no exact rule can be laid down.

After these instillations the patients feel more or less pain. In some hardly any at all, in others rather intense pain, which, if the instillation has been made in the posterior urethra, may cause rectal tenesmus; but, as a rule, the painful sensation caused by the injection soon passes away.

In regard to the indications and contraindications for the use of instillations, we may say that, as to anterior urethritis, it will generally be cured by antiphlogistics and balsamics, followed by astringent injections, which should be properly done; but sometimes a chronic inflammation will persist in the bulbous portion just at the posterior dilated part of the spongy portion of the urethra, when four or five drops of a one-to-fifty solution of nitrate of silver repeated once in two days will cure this state, after four or five applications. The first instillation is most likely to increase the discharge, but this will rapidly disappear afterwards. Posterior urethritis has much more tendency to become chronic, and is often accompanied by an inflammation at the neck of the bladder which has been given the name of *urethro-cystitis*. It is just in these cases that instillation is of the most value. Fifteen to twenty drops of the one-to-fifty solution of nitrate of silver should be used every two days. The reason why we use a larger number of drops here is because some of them fall into the bladder and, mixing with the urine, form insoluble chloride of silver. After twelve to

fifteen instillations, these cases are mostly cured; if they are not, we stop the instillations for two or three weeks and then start a new series of instillations with the same solution or stronger ones,—of one to forty, one to thirty, one to twenty.

If there is a persistence or an aggravation of the inflammation, it will probably be found that it is owing to the *nature* of it, or, rather, its origin, which we often find to be tubercular in these cases, and all nitrate-of-silver instillations are contraindicated.

In *cystitis*, in both the acute and chronic forms, instillation is an excellent treatment. As to the first and in gonorrhœal cystitis, which is so common, the inflammation is localized at the neck, and gives rise to frequent micturition or even hæmaturia mixed with pus. Pain is the prominent symptom, and owing to the increased sensibility the bladder will not hold the smallest quantity of urine. If you attempt the treatment by washing out the bladder, you will dilate it and increase the difficulty. The proper treatment in all painful cases of cystitis is instillation, and you will find that they will render the bladder less sensitive at once, and allow it to contain the urine, while the frequent urination will stop. Before making these instillations make the patient urinate, or else pass a sound, if you think the bladder is not entirely empty. The instilled drops should fall in the posterior urethra and they will pass into the bladder at the base, where the lesions are mostly found. Use from twenty to thirty drops of the one-to-fifty solution of nitrate of silver, or less if a stronger solution is preferred. They should be repeated every two or three days, the interval depending on the degree of pain produced by them. The first one often produces some blood (hæmaturia), but after two or three applications a considerable amelioration will succeed this, and cure rapidly follow. In the chronic forms of cystitis, where the pain is not so great and the bladder has a greater capacity, antiseptic washing out of the organ may be used as treatment, but very often even here we prefer instillations, using a boric-acid solution first to wash out any pus that may exist. In all the very painful cases the instillations will be found to be the best treatment.

In *tubercular cystitis* it is now understood that instillations of nitrate-of-silver solutions are dangerous, as they increase the symptoms instead of decreasing them, and in such cases we use instillations of corrosive-sublimate solutions. Twenty to thirty drops are instilled into the posterior urethra of a solution of one in five thousand at first. This is increased in quantity, and finally the one-to-one-thousand solution is used, and with this last a smaller number of drops are used. This treatment has succeeded in some cases of chronic cystitis when the nitrate-of-silver solution failed.

Finally, instillations are contraindicated in all cases of neoplasms in the bladder or urethra, as they only increase the pain and cause hæmaturia, which it is difficult to stop.

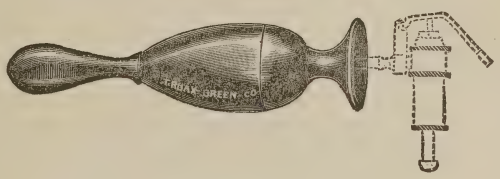
AN IMPROVED INFLATOR FOR TREATING THE MIDDLE EAR WITH COMPRESSED AIR.

BY SETH SCOTT BISHOP, M.D.,
Chicago, Illinois.

THE inflator shown in the cut is a modification of the one described and illustrated in the INTERNATIONAL MEDICAL MAGAZINE for September, 1892, in my paper on "Compressed Air and Sprays in Diseases of the Nose, Throat, and Ear."

The improvement consists in the addition of a finger flange or holder to the tube into which the cut-off of the compressed-air apparatus is inserted.

By means of this flange the inflator is held between the first and second fingers of the hand that holds the treatment-tube, while the thumb works the spring of the cut-off. The latter is shown by the dotted lines. This arrangement gives the operator complete control of the inflator, which is otherwise a somewhat slippery instrument, especially when oily medicaments are used.



The air-current always has a tendency to throw the inflator off from its connection with the cut-off as soon as the former impinges against the enclosed medicated sponges, for the latter offer a resistance to the passage of air amounting to about one-third of an atmosphere. When considerable pressure was used, it sometimes happened that the old form of instrument would escape from the control of the fingers, owing to the insufficient hold that could be obtained, and it was liable to drop to the floor, and so interrupt the treatment, and possibly break the inflator.

Charles Truax, Greene & Company have made this flange of the same material as that of which the inflator is constructed, and in such a manner as to re-enforce the projecting tube by a strong collar and shoulder. The opening in the centre of the flange is conical in shape to fit the cut-off securely, and it allows of charging the enclosed sponges with fluid remedies by means of the medicine-dropper without taking the instrument apart.

This improvement is easily attached to the old-style inflators.

SUPRA-PUBIC HYSTERECTOMY FOR THE REMOVAL OF FIBROIDS OF THE UTERUS.

BY A. H. CORDIER, M.D.,
Kansas City, Missouri.

In an article for a medical journal one cannot give a minute and detailed description of the various situations or relation, shape, sizes, pathology, etc., of these growths, but must be restricted either to general rules and classifications or to some particular phase of the subject under discussion. The question, How shall the cervix or stump be disposed of in supra-pubic or abdominal hysterectomy? is one which at this time is being quite extensively discussed by various writers and operators, the opinion of each writer being in accord with the operation performed and the successes attained by a trial of the various methods, or the adoption of a choice from the list recommended by others, one writer claiming total extirpation as being the ideal method, another amputation and dropping the stump, still another anchoring the stump in the lower angle of the abdominal incision after clamping by some one of the various devices.

I do not propose to discuss the merits or demerits of the various methods of doing a supra-pubic hysterectomy, but to give in detail my method of dealing with fibroids of the uterus where an operation is advisable, either from the size of the growth or to remove symptoms or conditions detrimental to health, produced by the presence of the tumor.

We have arrived at a period in the history of pelvic surgery where we cannot yield to the plea for *ideal surgery*, as far as a theory is concerned, but must submit to the more intelligent entreaty for good results and low rates of mortality. If a skilled operator has a preference or is partial to a particular method, he is certainly entitled to do his favorite operation, provided his results are equally as good as others doing the same work in any other way. If a large series of cases be reported with a mortality of five per cent. after a given method by one surgeon, and, on comparing this percentage with the work of another doing the operation with some modifications, you find a death-rate of twenty per cent., you may rest assured that the fault in the majority of instances will be found not in the operator as much as in the faulty principles underlying the procedure of his choice.

One of the greatest laparotomists (judging by the number of his cases) known to-day has always had a high mortality in ovarian operations; not that he did not do his work thoroughly and understand his method, but that his selection was poor and faulty. This venerable surgeon and his work stood for years as a barrier to progress and reduced mortality, as his results

were for a long time looked upon as being as near perfect as it was within the power of the surgeon to obtain. Thanks to modern improvements, the mortality has been reduced in this class of cases from twenty-three to four per cent.

The remarks relative to ovarian operations apply with equal and undisputed force to the removal of the uterus and its appendages for any condition demanding a hysterectomy for its removal or cure. Some refuse to accept these facts, and continue to operate with the high death-rate of the older operators. They have, as it seems, failed to reap the beneficent harvest, and the lessons taught by the errors and mistakes of the pioneers have, to them, availed nothing. The mistakes of these venturesome mariners on the unknown seas of abdominal surgery have left their buoys floating above the surface as danger-signals to be avoided by those to follow. Delays are dangerous. Do not wait until your patient is reduced to such an extent that she "cannot walk a mile."

Mr. Tait says, "The terms fibroid, fibrous, and fibroma as applied to uterine tumors should be banished from pathological nomenclature. I have now examined a large number of solid uterine tumors, and I have never met with one in which simple fibrous tissue played any but a very subservient part," claiming that the principal make-up of these growths will be found to be fusiform muscular fibre with its characteristic rod-shaped nuclei. Again, he says, "In neither of these varieties (the multinodular or hard, the œdematous or soft) do we ever see immature cell-growths; this is why we can say of uterine myoma, it is the only tumor besides lipoma which is never malignant." Again, he writes of a myoma which became cancerous after operation. I think Mr. Tait's statements are true as far as the composition of the soft or œdematous myoma is concerned, but are decidedly at variance with most authors relative to the make-up of the hard multinodular fibroids so frequently found in this situation. The œdematous tumor makes its appearance (generally a single growth) at almost any time after puberty, differing in many respects in its history and behavior from the ordinary fibroid. It is a neoplasm of rapid growth in the majority of cases, as a rule unaccompanied by the profuse hemorrhages so characteristic of the hard fibroid. The growth attains enormous proportions, producing late pressure-symptoms, and not only fails to disappear after the menopause, but may continue to grow, and in some instances with greater rapidity than prior to the cessation of the menses. The removal of the appendages fails to check its growth. The experience of Mr. Tait relative to these growths becoming malignant has been also the experience of others. I think many of these so-called œdematous myomas are sarcomas from the beginning, thus making the total removal by early surgical means all the more imperative and advisable.

It is not an easy task from the macroscopical appearance of the growth to differentiate a sarcoma from an œdematous myoma. Pozzi says, "They (œdematous myomas) are *usually* benign." A fibro-sarcoma may be said to

always have its origin in a myoma or fibro-myoma. The "recurrent fibroid" of some writers is in reality a sarcoma.

Œdematous myoma may grow so insidiously as to escape the patient's notice, until, from its size, pressure symptoms develop. For instance, the accompanying cut (Plate I.) is from a photograph of an œdematous myoma removed from a young lady twenty-one years old. The growth weighed ten or twelve pounds. It was first discovered by the patient a few days prior to its removal by a supra-pubic hysterectomy. This patient had no symptoms save an occasional retention of urine for a few hours. The growth was smooth, non-adherent, and firmly wedged in the pelvis. Patient made a rapid and complete recovery.

The old statement that uterine fibroids are more frequently met with in the negro race is not sustained by the experience of many practising in the Southern States. Many of the old so-called fibroids in the negroes are now recognized by the modern diagnostician as cases of pyosalpinx, the result of gonorrhœa, abortion, or tuberculosis, three diseases of frequent occurrence in this race.

The diagnosis of this form (œdematous) of tumor occurring at or about the menopause is attended with no little difficulty, as its growth is often rapid, unattended (sometimes) with severe suffering from pressure, as the rapid growth causes it to rise quickly out of the pelvis. If the menses have recently ceased, it will tax the skill of the most experienced operator and diagnostician to arrive at a positive conclusion.

The tumor has a semi-fluctuating feeling about it that makes one doubt the infallibility of his diagnostic ability, and even as was the case with Mr. Tait, in two instances, "with one hand in the abdominal cavity and a finger of the other in the vagina, the exclusion of pregnancy was impossible, or so doubtful as to warrant the closure of the abdomen without removing the suspected œdematous myoma."

I have seen an eminent gynæcologist open the abdomen and close it again, leaving an œdematous myoma larger than a big cocoa-nut untouched, fearing to remove it lest it prove to be a pregnant uterus. The growth was subsequently successfully removed by the same operator.

The presence of the quickened fœtal heart-sounds in a circumscribed locality would be strongly in favor of its being a pregnancy, but there is often a circulatory sound in the tumors of the uterus which could be easily misinterpreted. The better plan would be to delay all operative interference when in doubt until after the normal duration of pregnancy has transpired. If in doubt, and urgent symptoms pointing to the tumor as their source demand earlier interference, proceed with all caution to the removal of the growth.

If the possibility of pregnancy is eliminated in the case, a positive diagnosis is not imperative, although desirable, for whether an ovarian or a par-ovarian cyst, a fibroid, or an extra-uterine pregnancy, it matters not, only in as far as concerns the steps in the various operations for their re-

PLATE I.—Myoma of the uterus, weighing ten pounds, removed by hysterectomy from an unmarried woman of twenty-one.

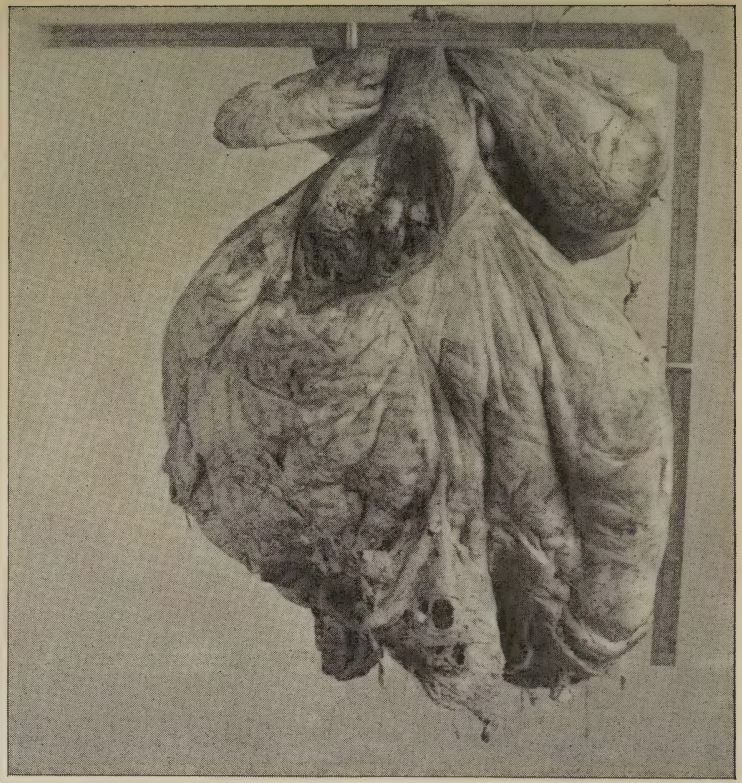


PLATE II.—Fibro-cyst of the uterus, weighing fifty-five pounds, removed by hysterectomy.

moval. The abdominal surgeon must be quick to recognize these conditions when once the peritoneum is opened, and as equally prepared to deal with the various complications liable to be met with unexpectedly in any case. The low rate of mortality from the removal of fibroids by a supra-pubic hysterectomy in the hands of men of recognized ability each year brings converting evidence of the safety of this method of dealing with large fibroids, whether multinodular or œdematous. Each year brings fewer advocates of the enucleation procedure, and the removal of the appendages is being more and more limited in its application as the difference in these growths becomes more understood. I believe where the removal of the appendages has failed to check the growth of fibroids, a close investigation of the growth will reveal its true character to be an œdematous myoma, and not a fibroid in the accepted sense of that term as applied to uterine tumors. Splitting the capsule and enucleation is dangerous in the extreme, patients dying from hemorrhage, peritonitis, and sepsis. The œdematous myoma refuses to be checked in its growth by any procedure short of a hysterectomy or total removal of the same by other surgical means, hysterectomy being the proper manner of removal, giving the lowest rate of mortality, performed as I shall describe it.

Dr. Jos. Price says (and if any surgeon living is entitled to an opinion he is), "The removal of a healthy tumor from a healthy peritoneal cavity should never be followed by bad symptoms, if the operation has been complete in every detail. Imperfect work will always be followed by disastrous results."

In no class of surgical work are complications unexpectedly found more frequently and difficult to deal with than in abdominal and pelvic surgery. The operator who begins an abdominal operation should not only be able to quickly recognize an unlooked-for complication, but equally as deft in dealing with the same. An intestine may require (from its firm attachment to the tumor) a resection, a bladder may be injured, a gall-bladder ruptured, a ureter divided, etc. All of these accidents have occurred in the hands of the most skilful operators. Accidents of this serious character should not occur with a frequency in the hands of any one operator to make it a noticeable fact that he gets all the *complicated cases*.

The Fallopian tubes are found diseased with a frequency in fibroids as to almost lead one to suppose that there exists a causal relationship. This supposition certainly finds support in the known fact of the increased flow of blood accompanying tubal disease as indicating a uterine hyperæmia, a recognized factor in the causation and maintenance of the life and growth of multinodular uterine fibroids.

The futility of electricity in the treatment of uterine fibroids has been proven by many long and faithful trials in the hands of competent men, yet you find advocates of this agent whose sincerity should not be doubted. That a tumor disappears occasionally while using electricity no one doubts, but it is equally true that large neoplasms of the uterus

have spontaneously disappeared with an almost equal frequency and certainty.

Mr. Tait, in 1879, truthfully said of this agent, "This method in this country has received a perfectly fair trial, and nothing has been secured by it except disaster. Tumors have been made to slough out, and in a few instances patients have recovered, but the majority of them have died, so that we have a confession on this part that whilst surgical interference is necessary, it must become a matter for careful conclusion in which direction the interference should be made most effectually and with least risk. When the electricians can contribute a complete and fully-stated list such as mine is, with as few records of disaster, they will have some claim to be heard. . . . It is certain that the proportion of disasters is very much higher. . . . I have no reason to complicate my own researches." This quotation from the pen of this great surgeon has remained, in the main, unchallenged, and electricity for the cure of fibroids, and in a great measure for the relief of some of the accompanying symptoms, has remained just where Mr. Tait, by his work and writings, placed it. Many have tried it long and faithfully, and about an equal number have abandoned its use for less dangerous, more certain and effective methods. Some faithful workers are still using this agent. The Germans, who are never satisfied with anything they see or hear, but must know its cause or source, have adopted this agent from this stand-point, and we may look for an epidemic of clay pads to sweep the earth at an early date, only to follow in the footsteps of "Koch's lymph" and "Brown-Séquard's elixir."

I have seen the electrical bayonet stabbed into these growths with a recklessness that it was alarming to behold. Plate II. shows a large fibrocystic growth of the uterus removed not long since by a supra-vaginal hysterectomy. Had the electricians seen the enormous dilated and tortuous blood-vessels coursing over its surface, I am sure that the mental security with which they use these agents of danger would certainly have been disturbed, and more care in the future observed in their use, or the use of the dart or trocar abandoned altogether.

Dr. Cushing, of Boston, in a late discussion on fibroids, said, "Under Dr. Price's influence I have abandoned the use of electricity. I started in with electricity with enthusiasm, got a battery,—a very good one,—which is now for sale. I worked very hard on fibroids, and found this much, I am free to say: . . . a great mass of nervous symptoms and worriment can be relieved precisely as well whether the current is turned on or not. That is a simple fact."

Operation.—The preparation of the patient for a supra-pubic hysterectomy is one of much import, and too much care and attention cannot be given to the details of the same. Cleanliness should be the watch-word, and the eyes of the operator the sentinel, that no unclean nurse, sponge, instrument, or assistant cross the aseptic halo.

A larger number of instruments are necessary in doing a supra-vaginal

Fig. 1.

Fig. 2.

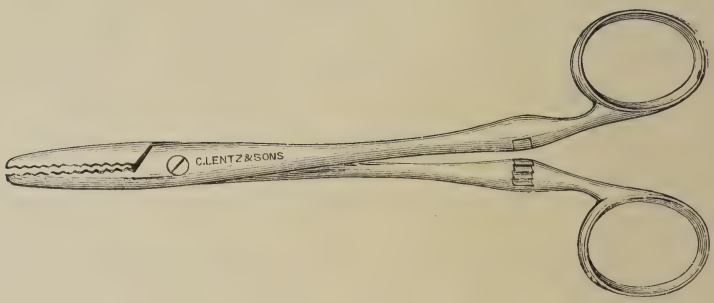


Fig. 3.

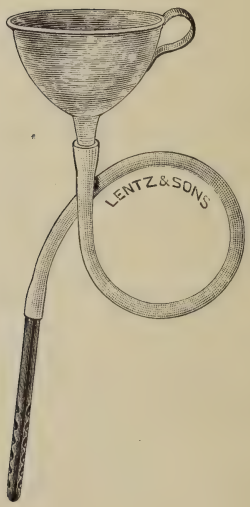
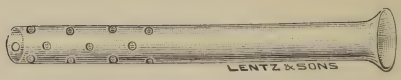


Fig. 4.



hysterectomy than is required in an ordinary "section." The operation itself demands a variety of instruments, and to be ready to meet unexpected complications requires more added to the list,—one dozen hæmostats, two hysterectomy-pins, one Kœberlé serre-nœud (see Fig. 1), with phospho-bronze wire (an extra Kœberlé, in case of a break, should be on hand), a knife for the abdominal wound, a large scalpel to cut away the tumor, four large tissue-forceps (see Fig. 2) to clamp the broad ligaments while making the pedicle, strong straight needles to sew the abdominal incision, silkworm-gut sutures, silk, two sizes, for ligatures,—bladder and intestinal injuries require a fine silk suture,—a strong straight needle to sew through the pedicle to reduce its size and to keep the peritoneum from retracting, large flat sponges, smaller round sponges, irrigator (see Fig. 3), drainage-tubes (see Fig. 4), piston syringe to empty tube, dressing material, iodoform gauze, etc.

I prefer ether as an anæsthetic in all abdominal operations.

Time is an important item in the performance of a hysterectomy, and the operator who recognizes this and completes his work quickly will, everything else being equal, have the lowest mortality.

The abdominal incision should be made (to begin with) a little nearer to the umbilicus than is usually made in a "section" for the removal of diseased appendages; this precaution is made necessary to avoid wounding the bladder in the first incision, as this viscus is frequently pulled up by the growth of the tumor. Having entered the peritoneal cavity and settled the error or correctness of the diagnosis, proceed to sweep the fingers or the whole hand over the growth, going first above, then to either side, finally examining very closely for the location of the bladder; satisfying yourself that the growth can be removed, your incision is carried downward to the full limit of safety, and if need be upward above the umbilicus. The growth is now brought forward through the abdominal opening. If omental adhesions are present, they are "sponged" off or double-ligatured, and cut until freed from the growth. In delivering the growth be careful that no undue force is used with the fingers in the region of the broad ligaments, where you will find enormously enlarged and tortuous blood-vessels. The same precautions should be exercised posteriorly, for here in many cases you will find large and vascular adhesions, which, if torn across, bleed profusely, and are found and ligated with much difficulty. In the globular œdematous myomas you will often find that it is with much difficulty that they can be removed from their snugly-fitting pelvic mould. They can be easily dislodged if you can succeed in getting air to the bottom of the pelvis by pressing the finger or a clean catheter alongside of the tumor to the bottom of the pelvis. If you fail in this, then the corkscrew of Mr. Tait will be of much assistance to you. This instrument is screwed into the "fundus" of the growth, and traction made slowly and steadily until the tumor is delivered. Examine again closely for the location of the bladder, which is usually marked by a difference in color and

the course of blood-vessels, and a faint line may be seen marking its limit when made taut. If still in doubt, have an assistant quickly introduce a catheter, and its limit is then easily made out. If the bladder is pulled up too high to admit of the wire being applied, carefully dissect it from the walls of the tumor and permit it to drop out of the way. If the pedicle is small the wire can now be applied; the pins should always be placed in position before the wire is tightened. The pins should be placed parallel and exactly across the abdominal incision, and on a level with the surface of the body. If the pedicle is too large to admit of being constricted by the wire and fastened in the lower angle of the wound, pass a large tissue-forceps on either side in broad ligaments, two to each ligament, and cut between them down to the tumor, and from side to side in front and behind, having previously caught the peritoneum with hæmostats just below the proposed line of incision in the capsule and *above* the *bladder attachment.* This last precaution guards the bladder and prevents the peritoneum and capsule retracting beyond the proposed location of the wire. Having divided the capsule, rapidly dissect it down to just above the location at which the wire is to be placed; you have almost practically enucleated the tumor, and have reduced the pedicle from the size of the thigh to that of the wrist. The pins are now pushed through the capsule and the small amount of the tumor remaining. The wire is now tightened by the nœud, the tumor and capsule are cut away an inch from the pins, and the wire tightened again until all oozing stops. At that stage of the operation when the tumor is delivered, a large flat sponge should be placed over the intestines, and two or three sutures passed through the parietes and grasped by heavy forceps and crossed over the line of the incision. This protects the intestines and keeps them in place.

The hemorrhage being controlled by the wire, the cavity of the cervical canal is cleansed, and a piece of gauze packed in it to prevent infecting the peritoneum during the completion of the operation. The peritoneum is washed out or cleansed by sponging, if it needs it, especial care being given to the location of the bladder, as here blood-clots are liable to be left behind. Two strong strings are placed around the pins to be used in pulling the stump into the lower angle of the incision and to hold it steady while the *peritoneum is being stitched around the pedicle below the wire.* Fine *aseptic silk* is used for this sewing. Union takes place quickly between the parietal and pedical peritoneum, and soon seals that cavity from any outside sources of infection. You now take a strong, straight needle, armed with stout silk, and sew back and forth through the pedicle to reduce its size, to aid in controlling hemorrhage, should the wire break in your absence, and to prevent the peritoneum retracting below the wire (not likely to occur), and to reduce the size of the stump. Silkworm-gut is used to close the incision. After introducing the sutures, remove the large flat sponge and irrigate or clean out the recesses of the peritoneum, especially in the pelvis, and, if the tumor removed was a large one, in the "flanks."

A drainage-tube can be used if the usual indications for its use are present, such as oozing from adhesions, free fluid in the peritoneum at the time of the operation, escape of pus from a pyosalpinx (a complication of frequent occurrence in fibroids of uterus). Care must be exercised in approximating the cut surfaces about the pedicle, for fear too much tension be placed on the integument surrounding the stump and cause sloughing of the skin. Pledgets of iodoform gauze are applied under the edges of the stump and under the pins to prevent pressure on the skin, and the stump is covered with iodoform to hasten the drying process. The usual dressings should be applied, with gauze, and the many-tailed bandage. The Kœberlé is permitted to project from the dressing that it may be tightened as often as may be necessary without disturbing the patient or her dressings.

If the pedicle is a large one, the dressings will soon be soiled by the discharge. The nurse is instructed how to tighten the wire if oozing of blood is detected. The wire is tightened by a turn or two of the clamp each day until the stump drops off, which usually occurs from the eighth to the twentieth day.

The dressings are changed as often as it is necessary. Every aseptic precaution should be carried out in its fullest detail in doing the operation and in the cure of the pedicle afterwards. *If suppuration about the stump takes place, it is due to a want of aseptic care on the part of the nurse or the surgeon.*

After this accident has occurred, it is best treated by keeping the groove around the stump lightly packed with iodoform gauze saturated with pure campho-phenique or listerine. If the pedicle is large, it may from day to day be reduced with safety with the scissors.

After the pedicle drops off, there remains a shallow cavity that is soon filled up by healthy aseptic granulation-tissue.

This description of the technique of a supra-vaginal or supra-pubic hysterectomy is one applicable to all uncomplicated cases. The inventive ingenuity of the surgeon will find here a broad field in which to extend in meeting unlooked-for complications.

To my readers who do this operation as I have described it I am afraid this article may seem elementary, but to one who has not performed or seen this operation performed, I am sure a detailed and simplified description will be read with profit.

If I have succeeded in making the various steps of this, the choice operation for the removal of uterine myomata, clear and plain to those unacquainted with its technique, the object of writing this paper has been attained and my desire gratified.

Deductions.—1. All rapidly-growing fibroids of the uterus should be removed.

2. Procrastination, tinkering, and electrical darts convert many a simple case into one of great magnitude, with many complications, making the work of the operator very difficult, and hazardous to the patient.

3. Small, stationary, hard fibroids, without dangerous symptoms, may be with safety allowed to remain, especially in women nearing the menopause.

4. Rapidly-growing œdematous myomas may not present any dangerous symptoms, may occur at any age, may and do continue to grow after the climacteric. Removal of the appendages does not check their growth.

5. Œdematous myomas should be removed by a hysterectomy, as the entire uterus will usually be found taken up in the body of the neoplasm.

6. Fibroids undergoing mucoid or colloid degeneration should be removed by hysterectomy.

7. Suppurating fibroids, when not extended into the vagina, should be removed by hysterectomy.

8. Pediculated fibroids, if the pedicle is small, may be removed with safety by taking all due precautions to guard against hemorrhage.

9. All cases operated on (with Dr. Price's qualifications) should get well.

10. Oöphorectomy as a means of relief for tumors of the uterus is being more and more limited in its sphere by a more thorough understanding of the nature of these growths.

11. Medicinal agents and electricity may in some instances relieve symptoms for a short time, but the uncertainty and the danger attending their use more than outweigh the expectations for good.

THE STATUS OF THE USES OF COCAINE IN GENERAL MEDICINE, AS BASED UPON THE EXPERIENCE OF PHILADELPHIA PHYSICIANS.

BY LEWIS H. ADLER, JR., M.D.,

Adjunct-Professor of Diseases of the Rectum, Philadelphia Polyclinic and College for Graduates in Medicine.

THE following paper is supplementary to a previous article, "The Status of the Hydrochlorate of Cocaine in Minor Surgery as based upon the Experience of Philadelphia Physicians," which was published in the *Therapeutic Gazette*, August 15, 1891. The two papers combined may be fairly said to represent the opinion of the profession in this city regarding the status of cocaine in its employment as a local anæsthetic in minor surgical practice and its usefulness as a drug in general medicine.

As a basis for the present article over one hundred and fifty letters were mailed to prominent physicians of this city, in which it was stated that I intended preparing a paper upon the subject,—the title of the present article,—and requesting a reply in which should be incorporated the writer's experience with cocaine, including the diseases in which the remedy had

been used, the doses employed, the results obtained (satisfactory or otherwise), any untoward effects noted or peculiar susceptibility of patients to the toxic effects of the drug, and, finally, the individual opinion of each writer as to the value of cocaine in general medicine, with particular reference to the likelihood of its use leading to the formation of the so-called "cocaine-habit."

Unfortunately, some of the gentlemen favoring me with a reply labored under a misconception as to the scope of the article, and included statements regarding the use of cocaine in minor surgical practice; as this subject is irrelevant to the present paper, I have been obliged to eliminate all such references or discussions from the extracts made of the letters, which I now have the pleasure of quoting.

For convenience I have arranged the replies alphabetically.

1. Dr. Harrison Allen believes that the cocaine-habit exists; two medical men of his acquaintance being victims to its use, but he is not in a position to give any precise data concerning these cases. Dr. Allen has had no personal acquaintance with the effects of cocaine when internally administered. He constantly uses the drug for its local analgesic effect, but has never observed any toxic impression.

2. Dr. J. M. Anders: "I beg to state that I have never used cocaine to any considerable extent. In two cases of asthma with moderate emphysema a two-per-cent. solution applied to the Schneiderian membrane with a syringe has promptly relieved the attack, and has seemed to delay their recurrence. In another patient suffering from coryza, the too free local use of the above-named solution caused toxic symptoms, such as nausea, great physical prostration, partial unconsciousness, and marked tendency towards syncope. This condition lasted for twenty-four hours. In the asthma of hay-fever a two-per-cent. solution applied to the nares has seemed to be of service in most instances."

3. Dr. John Aulde writes that shortly after the discovery of the special virtues of cocaine as a topical application, etc., he used it to a moderate extent internally, but his experience was decidedly unfavorable, and believing that it was calculated to work much harm when used in general practice, he has never written a prescription for its internal use. Dr. Aulde still uses the drug to a limited extent, and with good results, as a temporary expedient, but he does not believe that it can be safely prescribed as a pain-relieving agent. He believes that much harm has already resulted from its indiscriminate use.

4. Dr. Thomas H. Andrews, *per* G. Milton Bradfield, M.D.: "Three well-authenticated cases (two of which were medical men) of the cocaine-habit have come under the notice of the district police surgeons. These cases were also addicted to the use of alcohol and morphine."

5. Dr. Richard A. Cleemann: "I have never prescribed cocaine for internal use. Have seen its toxic effects, however, in two cases. In the first case cocaine was given by mistake for codeine, in a cough mixture of syrup

of acacia, of which solution a teaspoonful, containing one-quarter of a grain of cocaine, was ordered to be taken every three hours. In a short time the patient, a delicate young lady of nervous temperament, complained of a feeling of oppression, indefinite malaise, and an irritation of parts of the skin, which was accompanied by a slight eruption. These symptoms soon passed away when the medicine was discontinued.

"The second case was that of a young boy, who had had an application of a solution of cocaine made to the inside of the nose at one of the dispensaries. I do not know the strength of the solution used. I was called to see him some hours afterwards. He presented then the appearance of a case of atropine-poisoning: face was flushed and pupils widely dilated, muscles were twitching, and there was slight muttering delirium. His pulse and respiration were, however, not disturbed. Perfect recovery occurred after the lapse of several hours."

6. Dr. Solomon Solis-Cohen: "Cocaine has an important place among the drugs upon which I place reliance. It is, in cases presenting no idiosyncrasy against its employment, useful as a cardiac stimulant and tonic, of prompt and decided action, also as a temperature-elevator in cases manifesting a tendency towards coldness, collapse, and prolonged subnormal temperature; and it is of decided advantage in allaying, controlling, and preventing vomiting in many cases of various origin. It is often advisable to precede its administration by lavage, in order to get rid of the irritants before seeking to apply the sedative; but in very many cases of sympathetic vomiting, the cocaine will be efficacious without preliminary cleansing of the stomach. The dose is from one-sixteenth to one quarter of a grain in about one or two teaspoonfuls of water.

"Very often in febrile conditions accompanied by irritability of the stomach, the use of cocaine, ten or fifteen minutes before giving food, will enable it to be retained when otherwise it would be rejected.

"As a general tonic, and as a cerebral restorative or excitant, I prefer the coca-leaf, in the form of a reliable fluid extract, alcoholic or aqueous. It seems to contain other principles and to differ from cocaine in its action, almost as opium differs from morphine, or cinchona from quinine. In using cocaine as a cardiant it is often usefully combined with caffeine or strychnine. The efficient dose of cocaine is usually from one-eighth to one-half of a grain. It may be given hypodermatically. The largest hypodermatic dose I have used has been one-half of a grain."

7. Dr. Charles W. Dulles: "My experience with cocaine has been very limited, probably because in the first case in which I made use of the drug—for a patient with heart weakness and valvular insufficiency—it did not demonstrate any apparent value of its power as a cardiac stimulant. I have also used it as a substitute for digitalis, and had to go back to the latter drug. I have used coca preparations as temporary stimulants with satisfaction."

8. Dr. Henry M. Fisher: "In combination with aromatics I have used

cocaine internally for the relief of flatulent dyspepsia, and in one case at the Episcopal Hospital it seemed to be of decided benefit in this condition."

9. Dr. M. Howard Fussel: "The following cases may prove of interest as bearing upon the subject of your paper:

"CASE I.—Mrs. F., aged twenty-six. After the birth of her first child she was attacked by a severe and painful dysuria. Both pus and blood were present in the urine. The tenesmus following urination was excruciating. Relief was not obtained by the use of such drugs as were known to me and my consultant as remedies for this condition. Finally, cocaine was resorted to; it was injected into the bladder immediately after each act of urination, and it gave entire relief to the patient so long as the local influence of the drug lasted. About two grains were used at each injection, as a smaller quantity had no effect. After each dose was administered the constitutional manifestations of the drug were noticeable. The primary effect produced was stimulation of all the senses. Although the patient might be tired and weary before the injection was given, its use would at once cause her to become bright and vivacious, and would relieve her mind of all feelings of care. Occasionally it produced palpitation of the heart. On two occasions alarming results followed the use of the injection. In both instances I was present at the time that the symptoms arose and had personally administered the drug. The first time I had left the patient and gone into the sitting-room, in a few minutes she appeared clad in her night-dress. She was delirious, and seemed possessed with the notion that her husband had deserted her. The delirium passed off in about an hour and left no untoward effects. On the second occasion she was suffering with an unusual amount of pain, and I gave the customary injection. Within fifteen minutes she became partially delirious, and twitching of the hands and face was noticed. The pulse became rapid and feeble, and palpitation of the heart was marked. The skin became cold and clammy. Stimulants were given, and the bladder was thoroughly cleansed. In about a half-hour the alarming symptoms had disappeared.

"This patient used cocaine in the manner described for at least three years, at all times having free access to the vial containing the solution. A perinephritic abscess was subsequently diagnosed, and the patient was operated upon, with the result of obtaining entire relief from all distressing bladder symptoms. Since her recovery three years ago she has never had the least desire to use cocaine in any way, though she still has access to the drug.

"CASE II.—A patient with typhoid fever, severe jaundice, and complete suppression of the urine. The urine was albuminous, and contained blood and casts. The pulse was very feeble and the patient apparently moribund. Cocaine in one-eighth of a grain doses was administered in addition to digitalis and whiskey,—remedies previously employed. Within two hours the secretion of urine was re-established, and the patient's general condition improved.

"CASE III.—A patient with typhoid fever and chronic Bright's disease. Sudden, complete suppression of the urine at the end of the second week. Cocaine was added to the whiskey and digitalis, previously given, with the result of producing a copious secretion of urine.

"CASE IV.—A patient in a similiar condition to the one just described. Cocaine was administered in the same way,—an eighth of a grain every two hours,—and with the same satisfactory result.

"These cases are of value from the fact that all the patients had suppression of urine, which was not relieved by the use of digitalis and whiskey alone, but soon after cocaine was administered the urine began to be secreted.

"CASE V.—A patient suffering with the vomiting of pregnancy, for which condition cocaine was given in one-eighth of a grain doses every two hours, but without relief in controlling the nausea.

"I have never met with a cocaine-*habitué*. From my experience with cocaine I should be disposed to resort to its employment in cases of loss of power of the heart's action, especially when associated with suppression of the urine. In properly-selected cases I should not hesitate to push the drug to its full physiological effects, for in such persons there is apparently no more reason to fear the formation of the cocaine-habit than there is the morphine-habit from the medicinal use of morphine."

10. Dr. W. H. H. Githens: "For a few years past I have been in the habit of using the muriate of cocaine, one-half grain, with oxalate of cerium, two grains, repeated every two hours, as a cure or relief for sick stomach, particularly that form which is of frequent occurrence during the early stages of pregnancy. The results obtained have been satisfactory and unattended by bad effects of any kind,—no undue stimulation and no desire to continue its use after its medicinal results were obtained. I have also used it as a spray in a ten-per-cent. solution for the relief and cure of acute nasal catarrh in its earliest stages. For the same purpose I have also employed it, combined with Hegeman's camphor-ice, made into a plug or suppository and pushed into the nostril. I have not found any form of snuff satisfactory in such cases. I have had good results follow the use of the drug, and have experienced no bad effects of any kind. I have not been in personal contact with any case of cocaine-habit, and those of which I have any knowledge have been also addicted to the excessive use of alcohol."

11. Dr. James Graham: "In two cases of impotence I gave vin. coca Mariani a full trial, but without obtaining any result. In other cases where I have tried the wine of coca as a tonic or stimulant it did not appear to be superior to plain sherry wine."

12. Dr. J. P. Crozer Griffith: "I do not remember to have met with any cases of cocaine-habit. I have witnessed a decidedly peculiar susceptibility to cocaine in some cases. I remember an instance in which a very few drops of a solution of the drug, dropped into the nostrils for

coryza, produced such unpleasant symptoms that the family was alarmed. There was the faintness, etc., peculiar to cocaine-poisoning. The quantity of the solution and the dose employed were no larger than I had used a number of times in other cases. In another case, where I had recommended the use of a coca-wine as a tonic, the patient procured a well-known preparation, which was taken without producing any untoward effects. On one occasion I substituted for this wine another, manufactured by a different firm, who are well known and have an excellent reputation. Shortly after the ingestion of a small quantity of the new preparation the patient was attacked by faintness, a feeling of sinking away, and dyspnœa, such as I witnessed in the case of cocaine-poisoning previously mentioned, only in this case the symptoms were of much less intensity. I do not know whether the first wine was inert (though I think this unlikely), or that the second wine was fortified by the addition of the alkaloid, or it may have been simply a stronger preparation. From my knowledge of the makers I am inclined to think that the last supposition is the most probable one. At all events, it is an indication that the wine of coca may become in some cases an unpleasant and even a dangerous medicine.

"I have resorted to the use of cocaine as a stimulant in the late stages of typhoid fever, but without obtaining the desired effect. My observations are, however, too few to be of weight here. I have also used the drug a few times in the effort to control tremor. In one case, where it was given for this purpose in a case of persistent tremor following typhoid fever, good results were obtained for a time, but they were not permanent."

13. Dr. Hobart A. Hare: "In regard to the internal administration of cocaine, I have found it very useful in some cases of vomiting dependent upon gastric irritability, when given in the dose of one-quarter to one-eighth of a grain. I have also found it of service as a general stimulant in cases of exhaustion during the course of prolonged diseases, such as typhoid fever, particularly when collapse was threatening. I know of two cases of the cocaine-habit, but, as neither of them was under my charge, I cannot give any definite information."

14. Dr. Robert P. Harris: "I have treated over two thousand inebriates; quite a number of opium- and morphine-takers, generally in the higher walks of life; but have seen very little of the cocaine-habit, which is of recent introduction. I have made but a limited use of cocaine as an internal remedy. I have employed it in painful intestinal lesions, but not often enough to establish an opinion as to its value. There have been some frightful results from its continued use, particularly in young subjects."

15. Dr. Charles M. Hay: "I have employed cocaine in irritable conditions of the gastric mucous membrane of acute disease with apparent benefit. In two cases of facial erysipelas with vomiting, its use seemed of positive value, in conjunction with the employment of lavage of the stomach. The cocaine was given in pill form (one-quarter of a grain), immediately after the contents of the stomach had been washed out. In

both of these cases there was marked chronic acid dyspepsia, with hypersecretion of mucus and occasional vomiting.

"I have employed the drug in cases of acute and chronic melancholia, but generally with negative results, except in the acute forms of *melancholia agitata*, in which cases I have thought that it gave some ease to the patient. The only other case in which I used the drug was one of cerebral perturbation associated with tremor, which condition followed typhoid fever, and the employment of cocaine seemed a better remedy than others which were fully tried. I have never observed any toxic symptoms following the internal use of the drug, and have never given a larger dose than a quarter of a grain, repeated three or four times daily."

16. Dr. Frederick P. Henry: "I have had good results from the use of cocaine hydrochlorate in hyperæsthetic conditions of the gastric mucosa, the so-called *neurasthenia gastrica*, or nervous dyspepsia. The doses in which I use it are small, rarely exceeding one-fourth of a grain, and it is probably for this reason that I have not seen in my own practice any toxic effects from the internal administration of the drug."

17. Dr. Barton C. Hirst: "I have tried the internal use of cocaine in the vomiting of pregnancy, but found it unsatisfactory, and now seldom employ it. I have also used it, by the rectum, after laparotomy, in the form of coca-wine with peptonoids."

18. Dr. Edward W. Holmes: "I have not met with any cases of cocaine-*habitués*, but some of the published cases have been apparently complicated with the joint use of morphine. Some time since, in preparing an article on cocaine, I made some experiments upon myself with the drug, so much so that the taste or odor of the alkaloid now nauseates me exceedingly, so that of late I have made no further experimentation."

19. Dr. Orville Horwitz: "I have administered cocaine (one-twelfth of a grain at a dose) in the nausea and vomiting due to different disorders of the stomach. I have also given it (in one-quarter- to one-half-grain doses) in those cases of dropsy dependent upon renal trouble, when there was no valvular heart-trouble, with marked benefit in both classes of cases. I have observed four cases of poisoning following the use of the drug in the urethra. The symptoms presented were as follows: palpitation of the heart, muscular tremors, insomnia, and one case had marked hallucinations, and another case had severe convulsions. From my experience, I believe that the strength of the solution to be used in urethral work should not be greater than four per cent., and it should not be retained in the canal over a minute. From some unexplainable cause patients seem to be more susceptible to the deleterious influences of the drug at one time than another.

"If the drug is employed with caution by the physician, and is not left to the indiscriminate use of the patient, I see no more danger from the formation of the so-called cocaine-habit than there is in the use of morphine or any other similar medicine. I have seen two cases of cocaine-*habitués*.

Both were physicians, and both persons produced the systemic effects of the drug by passing into the nasal cavity a bit of cotton soaked with a ten-per-cent. solution of the alkaloid. They both refused to try any plan of treatment for their relief."

20. Dr. W. E. Hughes: "I have used cocaine internally in cases of vomiting, and less frequently in cases of dyspepsia. I have also employed it as a stimulant in exhausted nervous conditions. The dose has been one-quarter of a grain to a grain, repeated several times during the day. The results obtained have been so unsatisfactory that I have almost abandoned its use. There have been no untoward results observed. I think it unlikely that its administration internally would lead to the cocaine-habit, for all the *habitués* that I have known (of whom I have not treated any) have taken it by way of the nostrils."

21. Dr. William Hunt: "The only experience I have had with the internal administration of cocaine has been in the form of the various wines. Sometimes I have used the vin. Mariani. I have always found its use of benefit in appropriate cases. I think that it acts more favorably than otherwise on the heart's action, being more of a tonic than a depressant of that organ. As an aid to the digestive powers it has proven very useful. I have not had any personal experience with cocaine-*habitués* so-called."

22. Dr. W. W. Keen: "As to the employment of cocaine internally I think that the only use I have made of it has been in checking vomiting after operations, etc. I have found that in one-quarter-grain doses, administered every hour, it has answered admirably. Sometimes a single dose will stop the nausea and retching. I have had no case of toxic effect, nor any person addicted to the cocaine-habit."

23. Dr. Joseph Leidy, Jr.: "My experience simply corroborates the statements of those investigators who have found in cocaine one of the most efficient remedies at our command as a cardiac stimulant and a diuretic. I have seen five cases of the cocaine-habit. In each case the patient's condition was obscured by the conjoint use of either alcohol or opium, or of both."

24. Dr. James Hendrie Lloyd: "Cocaine has not seemed to me to have a very extensive usefulness in medicine. As a brain stimulant it is very potent, but apt to do more harm than good. I know of few, if any, cases in which it can be justifiably used as such. Certainly it ought not to be employed in hysteria, melancholia, or other psychosis, both because its relief is slight and temporary, and especially because of the danger of forming the cocaine-habit.

"Because of this habit it is a dangerous drug (especially when used about the nose and throat). Physicians take upon themselves a great responsibility when they place it in the hands of their patients.

"I used cocaine once, with some relief, in a case of rare myoclonic disorder, possibly of reflex origin, involving the muscles of the tongue, neck and chest, and the diaphragm. Large doses (one grain, repeated at frequent

intervals) were necessary. The patient was not cured, however, and the drug was discontinued.

"As a spray to the throat and larynx in the sore throat of advanced phthisis it is a temporary relief. Its action, however, is very fugacious, and the patient is apt to want it constantly. In hay-fever, where there is often a markedly neurotic element, the relief is often followed by a reaction which leaves the patient distinctly worse. I have never seen its use cure this disease, or even a simple coryza. As it is not a germicide, there is no reason why it should cure these latter diseases. The congestion following its use makes the patient worse.

"I have used cocaine by suppository, with some apparent advantage, in the tenesmus of dysenteric disorders, especially in the entero-colitis of young children. I have not as yet seen many cocaine-*habitués*, but I believe they are developing, and that we shall have more of them to treat in the future."

25. Dr. Thomas J. Mays: "I have found the internal use of cocaine beneficial in the hyperæsthesia of the larynx or pharynx when unaccompanied by any structural lesion in them or in any other organ. This condition is oftenest found in nervous females, not necessarily hysterical, and it generally manifests itself in the following symptoms: an almost incessant, dry, short cough, without any, or else a very slight, expectoration: a tickling in the throat when efforts are made to talk or when cold air is inhaled. In such cases I have seen a condition of affairs which seemed to denote a certain amount of air-hunger,—*i.e.*, a feeling as if not enough air entered the lungs. Neuralgic pains in other parts of the body, and also spinal tenderness, may be associated with it. Cocaine in doses of from one-tenth to one-sixteenth of a grain every four hours usually affords relief. When there is much neuralgia present, the action of cocaine is enhanced by the addition of small doses of quinine and phenacetine. In the tickling cough of an acute cold in the throat cocaine also acts favorably in many instances, but in the cough due to bronchitis, or to any structural change in the lungs, I have never derived any benefit from its local or internal administration."

26. Dr. D. J. Milton Miller: "My experience with the internal use of cocaine has been quite limited, principally because its physiological effects have never seemed to me to indicate a very wide field of usefulness, and because in the few cases I have used it it failed to produce the desired effect. I employed it in several cases of chronic alcoholism and of the morphine-habit. In none of these cases did it appear to have any effect, or, if any, but an indifferent result, in relieving the malaise, the nervous depression, and the craving for stimulants. The dose given was from a quarter of a grain to one grain, two or three times daily, hypodermatically or by the mouth. Used internally for its local effects, however, the results have been most gratifying. In cases of gastrodynia, in one-quarter to one-grain doses, with bismuth, on an empty stomach, it has given instant relief. In the vomiting of gastric catarrh, alcoholic or otherwise; in the pain and vomiting of gastric ulcer, given in the same dose and in the same manner as

in gastrodynia, it has been equally effective. The results have not been so good in the vomiting of pregnancy and in that distressing form so often seen in pulmonary phthisis, which is due to the cough.

"In the class of cases just narrated the drug was usually associated with subnitrate of bismuth. I have also found it effective when administered alone. I have seldom noticed any toxic effects from its use. Occasionally, however, patients have complained of cardiac oppression or palpitation, and of fulness or lightness of the head; a sense of well-being has also been mentioned as existing. I have more often seen these effects, however, after its local use in cases of dental caries, and in eye and ear cases. As to the formation of the cocaine-habit from the internal use of the drug, I have had no experience and have seen no cases of the habit itself."

27. Dr. A. K. Minick: "I prescribe a troche of cubeb, morphine, and cocaine (one-twentieth of a grain) for the cough of phthisis, with good results. I have not met with a case of cocaine-habit."

28. Dr. J. Cheston Morris: "I have rarely employed cocaine internally, save in some cases of debility in old age, and in these cases I do not think it equal to the elixir of the valerianate of ammonium. In younger persons I would deprecate its use from its aphrodisiac tendencies."

29. Dr. J. H. Musser: "I have used cocaine in cases of functional vomiting in which the vomiting appeared to be due to exhaustion alone, or else was of reflex origin. In such cases the drug was often of great service. I always administered it in solution in one-quarter-grain doses, given every two hours. I have also seen good service result from its use in anasarca from Bright's disease (acute), and in the dropsy of cardiac origin. Without doubt the usual secretions are increased in amount, and particularly was this noticed in cases where the pulse was feeble and the heart's action weak. In such cases one-quarter-grain doses increasing to a grain were administered every two or three hours. It seemed particularly valuable in cases in which the long use of digitalis caused a loss of appetite and nausea. The change temporarily to cocaine was of service in two ways: the exhausted powers of the stomach were stimulated, and at the same time the circulation was toned up. Of course I would not persist sufficiently long in the use of the drug to be able to say in any one case that it cured the difficulties in the sense that one would say digitalis had cured allied disease.

"In chronic cases, the prolonged use of cocaine has never seemed to me to be justifiable, because in such cases it has always been necessary to increase the dose, and such increase has caused stimulation, which it has seemed to me it was unwise to produce. In one case a quarter of a grain every two hours caused exhilaration, and in another case one-half of a grain every three hours caused slight delirium. Otherwise I have not noticed any untoward effects. I should certainly fear that its prolonged internal use would lead to the formation of the cocaine-habit. I have never met with any cases of this character."

30. Dr. F. A. Packard: "I have employed cocaine internally to a

moderate extent. Among the affections in which I have found it to be of benefit may be mentioned the vomiting of pregnancy, stricture of the œsophagus, and chronic Bright's disease. In the first-named condition I found that it acted very well. In the second affection I employed it with benefit for two purposes: to allow of the painless passage of the œsophageal bougie, and to enable the patient to eat with comfort, by relieving the additional spasmodic constriction which is produced by the contact of food with the mucous membrane of the œsophagus. In chronic Bright's disease (of both the parenchymatous and interstitial varieties), I have found the drug to have a marked effect in increasing the daily excretion of urine.

"As a cardiac stimulant it has proven well-nigh useless in my experience. I have never seen any injurious results from its employment under the direction and supervision of a physician. But one case of cocaine-habit has come under my observation. The patient, a gentleman, had been for years taking increasingly large quantities of morphine, hypodermatically, and hearing of the merits claimed for cocaine as a harmless but efficient substitute, had taken large amounts of the newer drug, hypodermatically. He was an absolute moral and a moderate physical wreck; entirely unable (?) to do without his daily quantity of cocaine.

"Water having been substituted without his knowledge for his bottle of cocaine solution, he improved under a mildly tonic treatment. After his confidence had been gained, he was told of the substitution practised upon him, and readily abstained from the use of either alkoloid. His health was thoroughly restored by a few weeks' treatment, but whether he has again taken up the use of either drug I am unable to state."

31. Dr. William G. Porter: "I have had no experience with the internal administration of cocaine, except as its use is connected with the employment of vin. Mariani, and other wines and elixirs of coca. I can, however, testify to this: that in a patient on whom I had removed the foreskin for apparent epithelioma, and subsequently removed the penis and extirpated the inguinal glands, when the disease recurred in both cicatrices and he was suffering from surgical hectic, etc., nothing relieved these symptoms so readily as vin. coca Mariani.

"In regard to the cocaine-habit, I have had no experience."

32. Dr. Wharton Sinkler: "I have used cocaine very little, as the few cases in which I have tried it did not seem to be at all benefited. I cannot recall any case of pure cocaine-habit which I have treated. I have had one or two morphine cases who have taken cocaine at the same time, but not exclusively."

Supplementary to this note Dr. Sinkler wrote as follows: "When I was in Washington recently I saw Dr. W. A. Hammond, who told me that he had never seen a simple case of cocaine-habit, and he did not believe the cocaine-habit existed, except in conjunction with that of morphine-taking."

33. Dr. Harris A. Slocum: "The experience with one case of cocaine-poisoning has taught me to exercise even more than my usual care in the

use of this drug. It occurred in the case of a lady upon whom I had operated, by Emmet's method, for a badly lacerated perineum. She had for several years suffered from severe attacks of cystitis, the inflammation of the bladder never entirely subsiding. For several weeks prior to the operation she had succeeded in obtaining great relief by the injection into the bladder of from ten drops to a half-drachm of a four-per-cent. solution of cocaine. On the second day after the operation a glycerin enema was given to move the bowels. It was unsuccessful, however, and the patient complained of such severe pain, both in the rectum and bladder, that the nurse was directed to use a drachm of the cocaine solution with the next injection, and to repeat it in an hour if the patient was not relieved. Shortly before she received these instructions she had, unknown to me, used a drachm or more of the cocaine solution in the bladder, and, not thinking to send me word to that effect, had followed it up with the further quantity in the bowel, so that the patient received altogether nearly three drachms of the solution, representing over seven grains of the salt. Shortly after administering the second dose the patient's condition was as follows: general numbness, followed by sensory and then motor paralysis of the limbs; the paralysis rapidly involved all the voluntary muscles, except those of the eyes. The diaphragm was strongly affected, so that it was with the greatest effort that she was enabled to expand the lungs. Consciousness was not lost, even for an instant; on the contrary, her mental activity was increased, and her perceptive faculties were particularly acute. The pupils were moderately dilated. Her body was cold and pale; the pulse rapid, and at times almost wanting at the wrist, beating at one time one hundred and eighty to the minute; the respiration was rapid and shallow; sensation was entirely lost; the chafing, rubbing, and pinching of the body by four strong female domestics was unfelt, as was also the heat from hot-water bottles. Hypodermatics of digitalis, ether, ammonia, and strychnine were given, and inhalations of nitrite of amyl. I believe the latter drug and the ether to have been the effective agents in causing her recovery, aided greatly, of course, by the means applied to stimulate the skin.

"In the process of recovery, motion returned first, and then sensation, beginning in the upper part of the body and slowly extending down to the toes. The whole episode occupied about six hours, during two of which she appeared to be dying, and believed herself that death was near. There was one powerful aid in her recovery that I have not mentioned, and that was a strong determination not to die. The stimulus which this intense mental effort offered to the respiratory and circulatory systems was, I believe, just sufficient to tide over the period of impending collapse, which would have been fatal had she yielded and made no effort to conquer it.

"She described the attack as commencing with waves of cold and numbness, beginning at the feet and quickly surging up over the body, occupying about five seconds, and culminating in a feeling of imminent suffocation.

"From a study of this case we may deduce the following facts: 1, co-

caine introduced into the rectum is capable of rapid absorption, and may induce grave toxic symptoms; 2, hypodermatic injections of ether and inhalations of nitrite of amyl counteract the poisonous effects of cocaine by strengthening the heart's action and lessening the resistance to the blood-current; 3, a strong mental effort may act as a potent adjunct in reinforcing the nervous system at a critical period (instances of this are commonly seen in cases of opium-poisoning, and when death is threatened from cold); and, 4, from a subsequent experience with this case, a person who has once been poisoned with this drug is more susceptible to its influence than he was before.

"As regards the use of cocaine in other parts of the body, I think particular care should be exercised in applying it in spray form to the throat. Very shortly after this drug appeared in the market I used it in this manner in the larynx in a case of acute laryngitis. Not more than twenty minims of a four-per-cent. solution had been employed, when the patient complained of a feeling of great weight in her legs and thighs, and a sensation of suffocation. These symptoms soon disappeared, and no ill effects followed. I have seen no untoward symptoms follow its application to the nares. I have given cocaine by the mouth in doses of an eighth of a grain to relieve severe pyrosis. It was successful, and no untoward effects followed. I have had no experience with *habitués*."

34. Dr. B. Franklin Stahl: "My use of cocaine in internal medicine has been chiefly in cases of nausea and vomiting. The best results have been obtained in those cases in which it could exert a direct local effect,—*i.e.*, gastritis. In cases of gastric ulcer its use has enabled the patient to eat and retain an increased amount of nutriment. For the vomiting of pregnancy, while it has occasionally given favorable results, I find myself using it less and less, because of frequent failure to accomplish the desired effect. I have found it, administered in one-eighth of a grain doses, in combination with strychnine and quinine, a safe and good tonic in a certain class of patients, advanced in years.

"In my hospital service I have used the wine of coca and its alkaloid to combat the opium-habit; the plan of treatment being a descending dose of opium and an ascending dose of cocaine. In two cases under observation it seemed to partially satisfy the craving for opium, but unfortunately they did not persist in the treatment long enough to justify any conclusion as to its value in curing the morphine-habit.

"In prescribing cocaine it is well to remember its incompatibility with calomel and other salts."

35. Dr. William S. Stewart: "I am not prepared to give a satisfactory report on the internal effects of cocaine. I have used it locally (a fifteen-per-cent. solution) with no ill effect. My impression has always been that the effects of the drug pass off too quickly for it to prove of any practical use when administered internally."

36. Dr. William L. Taylor: "My experience with cocaine by internal

administration has been almost exclusively in cases of persistent irritability of the stomach, due either to a local cause or to some eccentric nerve disturbance. Most prominent among the cases have been those suffering from the vomiting of pregnancy. In at least fifty per cent. of them cocaine by the mouth (one-tenth to one-fifth of a grain), with camphor hydrobromate (one grain), or zinc phosphide (one-tenth of a grain), repeated every two or three hours, has afforded relief. In these cases there was a general neurasthenic condition. But in those patients in whom the vomiting was unaccompanied by other nerve phenomena, cocaine did not give as satisfactory results.

"Another condition in which cocaine has often been of good service is in ether-nausea, associated with depression.

"In one case of opium- and ether-habit, after a debauch, cocaine, combined with camphor hydrobromate, relieved the gastric disturbance and prostration.

"In its administration I always commence with a small dose,—about one-tenth of a grain,—and repeat it frequently, gradually increasing the dose until I obtain the relief sought, or until wakefulness becomes marked. This wakefulness, in my experience, has been the most frequent toxic symptom. It is not an unpleasant wakefulness, but a comfortable, restful condition. I have not met with a genuine case of cocaine-habit, but, from the action of the drug, I would judge such a habit to be among the grave responsibilities."

37. Dr. James Tyson: "I have not had much experience with the administration of cocaine. Have given it in quarter of a grain doses for nausea and gastric discomfort with reasonably satisfactory results; have also used it with a view to obtain its asserted diuretic effects, but the results have been somewhat uncertain. I have known it to produce diuresis. Have never seen a case of cocaine-habit, at least have never had any under my treatment."

38. Dr. J. B. Walker: "Have not met with a case of the so-called habit. Have made no trial of cocaine except in cases of minor surgery, when I have resorted to its employment to produce local anæsthesia."

39. Dr. De Forest Willard: "I have seen a number of individuals addicted to the use of cocaine, and I believe that the number of such *habitués* is rapidly increasing. It seems thoroughly to enslave them, and is one of the most seductive of our stimulants, whether used internally, hypodermatically, in the wines of coca, or even as a nasal spray.

"I am as careful and particular in regard to concealing its identity when it is used as I am in regard to morphine. In many forms of vomiting I find small doses—from one-eighth to one-quarter of a grain—very effective, either with or without creasote."

40. Dr. Charles Meigs Wilson: "In a limited number of cases I have seen good results from the use of cocaine,—in the vomiting or nausea of pregnancy, in the nausea of *mal de mer*, and in violent nausea and

emesis attendant upon gastric irritation from the ingestion of faulty articles of diet, etc. For the latter class of cases I have used it in one-quarter-grain doses, repeated at intervals of one or two hours, until the symptoms are in abeyance. I have seen two cases of the pernicious use, or abuse, of cocaine,—one of a doctor in Philadelphia, now dead, who contracted the habit of its hypodermatic use, and another of a dypsomaniac, who abused the drug, taking it in the same manner.

"The history of these two cases leads me to believe that cocaine-*habitués* are harder to control and less liable to reform than the opium-, chloral-, and alcohol-takers. I have under my care at present a case of cocaine-habit, and later on should be glad to report the result of her case.

"Regarding the treatment of cases of the cocaine-habit, I am accustomed to give (daily) diminishing doses of the drug, cutting the dose in half every forty-eight hours, exhibiting it hypodermatically, isolating the patient from all communication with friends and every possible source of supply, gaining the patient's moral support and interest, and keeping him under rigid control. So soon as I get the dose reduced to an infinitesimal amount, I give simply water hypodermatically. Then the use of iron, strychnine, and the resort to mental occupation will usually effect a cure, save in those cases where what might be called the moral equilibrium is destroyed."

41. Dr. James C. Wilson: "My experience with the internal administration of cocaine has been confined to acute cases only. I have given it in a considerable number of cases of enteric fever, in the latter stage of the disease, to combat the tendency to cardiac asthenia. I have used it by the mouth and hypodermatically for this purpose, in doses of one-sixth of a grain, repeated at intervals of from two to four hours, or, where the effect has been pronounced, at somewhat longer intervals.

"In a fair proportion of the cases cocaine thus administered has appeared to have the properties of a cardiac stimulant; in other cases it has not been followed by any obvious effects; and in a limited number of cases its effects upon the circulation have appeared to be distinctly depressant.

"As I have invariably employed the drug in the form of compressed hypodermatic tablets, prepared by the same manufacturers, I am led to believe that the depressant effects observed in certain cases are due to idiosyncrasy.

"I have met with three instances of the cocaine-habit. In each case the real cause of the peculiar symptoms was unsuspected by the patient and the medical attendant. The most prominent symptoms were extreme physical and mental depression, with restlessness, insomnia, loss of appetite, gastric and intestinal indigestion, and constipation alternating with diarrhœa. They were evidently due to the excessive use of nasal sprays of rather strong solutions of cocaine, in one instance a four-per-cent. solution being used at short intervals, and to the extent of an ounce in the course of thirty-six or forty-eight hours. In all three of these cases the discontinuance of the cocaine spray was followed very rapidly by recovery."

42. Dr. Samuel M. Wilson: "I have never ordered cocaine itself internally, but have used the wine of coca, usually in combination with other drugs.

"In cases of dyspepsia where much general weakness was complained of it gave temporary relief, but seemed to aggravate the stomach-trouble. In cases of debility it relieved languor for a few days, but seemed then to cause dyspepsia, so that I now seldom use it in such cases.

"I have never met with any cases of cocaine-habit.

"My principal experience with cocaine was in its use on two occasions, both times as a stimulant,—a grain of the crystallized muriate in a capsule, of which dose of the drug each man partook about an hour or more after a meal and just before a boat-race.

"The immediate effect was increased confidence and a sense of power, which, however, showed itself more in a lessening of the feeling of fatigue following the strain of rowing than in any apparent increase of force. The exertion could be sustained longer, but could not be increased in force.

"The after-effects were inability to sleep, though feeling a desire for it, loss of appetite, accompanied by a furred tongue, and a dull headache. This condition lasted for several days. I think the effect was about the same on both occasions, except that once one of the men had a violent attack of vomiting, which was followed by great prostration. The only pleasurable sensation noted was that of a feeling of buoyancy immediately after swallowing the drug. The man who proposed the experiment had great difficulty in inducing those who willingly made the first trial of the drug to repeat the dose.

"On one occasion, after some fatigue and loss of sleep, I used a hypodermatic injection of about one-third of a grain of cocaine. It acted as a decided stimulant, and prevented sound sleep for about twelve hours. The following day there was headache and want of appetite, which lasted for only a short time."

(To be continued.)

REVIEW OF MEDICINE.

MEDICINE.

IN CHARGE OF JUDSON DALAND, M.D.,

Instructor in Clinical Medicine and Lecturer on Physical Diagnosis and Symptomatology in the University of Pennsylvania, Assistant Physician to the University Hospital; Physician to the Philadelphia Hospital and to the Rush Hospital for Consumptives.

ASSISTED BY

JOSEPH P. TUNIS, M.D.,

Philadelphia.

Malarial Plasmodia. (*Deutsche Medicinische Wochenschrift*, Nos. 38 and 39, September, 1892.) By Dr. Bein.

In the course of one of his clinical lectures Professor Leyden demonstrated the malarial organisms in a case of intermittent fever. The patient was a Pole, thirty years of age, who with his wife and child had come to Germany after living for some time in Brazil. On admission to the hospital it was impossible to gain any further information from them, as they could not speak German. The diagnosis was made in each of the three cases from a microscopic examination of the blood. There were also present slight rigor and high fever.

These peculiar organisms are constantly found in the blood of malarial patients and are undoubtedly the cause of the trouble. The plasmodia, or amœbæ, are small, round, shot-shaped bodies from one-eighth to one-tenth of the size of a red blood-corpuscle. They are pale grayish, with poorly-defined outline, and are easily overlooked. In fresh preparations they are extremely active, moving about from place to place by projecting and withdrawing portions of their bodies. They also have minute scillæ attached to them, which are used for locomotion. When first formed the plasmodium is like an amœba and without pigment. It soon enters the blood-corpuscle, however, where it grows and takes up pigment. Under a magnifying power of one thousand diameters these pigment granules are seen to move about rapidly in the plasmodium. Certain it is that these little particles play an important part in the life of the plasmodium. From the large, pigmented form the plasmodium generally passes into the third stage, of cell-division or spore-formation. In some cases the pigment is arranged in such a manner as to cause the parasite to assume the appearance of a daisy or rosette. In describing the different forms which the parasite may take the writer prefers to follow the method of Pleben.

With Bastianelli and Bignami, he believes that the half-moon forms are

degenerated plasmodia, as he has observed all the possible intermediate forms, from the round to the egg-shaped, spindle, and half-moon varieties, in dry preparations. While he considers that a microscopic examination of the blood in malarial cases is very helpful in arriving at a correct diagnosis, he does not agree with certain Italians who claim to be able to tell from the appearance of the plasmodia whether the case is one of tertian, quartan, or quotidian malaria. All that a microscopic examination of the blood can accomplish, at present, is to establish the presence of the parasites and determine whether or not they are present in large or small numbers. Only a very rough idea of the prognosis can be formed from such an examination alone. Several cuts representing different varieties of the plasmodium add very much to the value of this interesting and valuable report.

The Red Coloring-Matter of the Blood. (*New York Medical Journal*, November 19, 1892.) By Ethel Blackwell, S.B.

From a number of experiments on women the writer has been enabled to make several interesting observations. Fleischl's hæmatometer was employed, and in all the tests the mean of five readings was taken. In cases in which the individual had slept badly the morning test showed a fall from similar tests taken under normal conditions. Fresh air in the room during the night was apparently an important condition in securing a high percentage of hæmoglobin. In certain cases gymnasium work, followed by baths, did maintain the percentage when it would otherwise almost undoubtedly have fallen. Exercise out of doors showed a maintenance or increase where otherwise there would almost surely have been a fall of hæmoglobin. Too much exercise, causing exhaustion, gave reduced readings.

Finally, we must conclude that the amount of hæmoglobin is variable in health, and that tests are of value only when used comparatively. A physician might easily make a test at four or five o'clock in the afternoon, and, getting a reading of sixty-five, might pronounce his patient anæmic, whereas if he had made the test three or four hours earlier,—say at one o'clock,—and obtained a reading of eighty-five, he would have pronounced the hæmoglobin in normal condition. Great exhaustion, great mental depression, and especially menstruation, might also lead him to mistake the true state of the blood. Therefore we clearly see that no practitioner would be in the least justified, without other evidence, in relying or putting any stress at all upon a low hæmoglobin reading unless it were properly corroborated.

Recent Intestinal Medicine. (*Edinburgh Medical Journal*, December, 1892.)

Dr. Alex. Lockhart Gillespie contributes some scholarly notes on this subject. In speaking of some recent views in regard to the pathology of the intestine, he says, "Its ptomaines, leucomaines, poisonous proteids, absorbed as such, and not metamorphosed into the innocuous albumen as in health, the absorption of gases, all are called on to do duty as the cause of various

complaints. Chlorosis is due to the refusal of the jejunal wall to allow sufficient iron to enter the system, or to the too great haste of the wall of the ileum to get rid of the iron again; pernicious anæmia to the absorption of poisonous substances, produced by the fermentation and stasis of the contents of the large intestine. The many symptoms usually attributed to gastric indigestion are not caused by reflex nervous irritation from an overloaded or overtaxed stomach: they are due to auto-intoxication, to direct irritation of the nerves and nervous centres."

Dr. Vopelius has lately published a book, "New Therapeutics," which is reviewed in the *Medicinische Neuigkeiten*. The principle of this new therapy, of course, is the antisepsis of the intestines: creosote for chronic, lysol for acute affections, while creolin is indicated in diseases of the vascular system. Erysipelas, carbuncles, and inflammations of the joints vanish under creolin; lysol cures scarlet fever, measles, etc.; but the most remarkable thing is the *speedy disappearance of carcinomata* under the administration of lysol.

Salophen is a new drug, supposed to split up only in the small intestine, and to be therefore both anti-rheumatic and anti-fermentative. It is shortly acetyl-paramido-salol, and splits up into salicylic acid and acetyl-paramidophenol. Dr. Fröhlich testifies to its great use in rheumatism, the freedom from ill effects observed from its use, and the large dose required before a toxic action is produced,—as much as seven to eight grammes for each kilogramme of body-weight in rabbits. Further researches are required before its usefulness can be established.

Scarlatina with Prolonged Hyperpyrexia. (*La Médecine Moderne*, September 15, 1892.) By Dr. Ch. Talamon.

After discussing some interesting features of this disease as it manifests itself in France, the writer arrives at the following conclusions:

1. There exists a form of scarlatina which may be called "scarlatina with prolonged hyperpyrexia," characterized by early manifestation and long duration of the high temperature.

2. The intensity and persistence of the fever are in relation with no appreciable local lesion or complication.

3. The hyperpyrexia is the essential element and the sole danger of this form.

4. Cold lotions and affusion act merely as insufficient palliatives of the high fever. The only efficacious treatment consists in the systematic employment of cold baths, given according to the method of Brand, every third hour, until the temperature has been reduced to less than 39° C.

THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,
Professor of Therapeutics, McGill University, Montreal, Canada.

ASSISTED BY

D. I. EVANS, M.D.

Treatment of Disease by Vibration. (Le Médication Vibratoire. *La Médecine Moderne*, September 22, 1892.)—In an article by Capitan a short sketch of this method is given. Early in the eighteenth century physicians had noted that patients suffering from melancholia were benefited by a ride in a coach over a rough road. Even at that date a machine had been invented to reproduce the movements of the coach for the benefit of the patient. Very recently Professor Charcot (*Progrès Médical*, August 27, 1892) has called attention to the good results which attend the employment of vibration in cases of paralysis agitans. He noticed the good effect which railway journeys had on such persons, and has accordingly subjected some patients to treatment by vibration by placing them in an arm-chair to which rapid oscillatory movements were imparted by electricity. Amelioration is generally experienced after the fifth or sixth sitting. The painful phenomena are chiefly influenced, the shaking becomes less, the stiffness seems to disappear, walking becomes easier, and sleep is quiet and refreshing. More lately a helmet has been constructed, in which a small electric motor produces about six thousand vibrations a minute. This helmet, worn for about ten minutes in the evening, proves a veritable sleeping-cap, and will secure a sound, quiet sleep in cases of insomnia not due to organic disease. It has also been used successfully in cases of migraine and neurasthenia. Charcot has also tried it with good effect in a melancholia patient, and considers it a powerful sedative to the nervous system. No *raison d'être* of this treatment is advanced.

Treatment of Inoperable Malignant Neoplasms by the Bichloride of Mercury in Oil. (*Lancet*, October 15, 1892.) By R. Cowan Lees, M.B.

Dr. Lees gives his experience with hypodermic injections of bichloride of mercury in oil, of the strength of one in two thousand, in three cases of rapidly-developing malignant growths. Distinct shrinkage of the tumor occurred after the injection. Although the cases ended unfavorably, yet Dr. Lees considers that the injections afforded much relief. He thinks that injections of any antiseptic material, the less innocuous and the more powerfully antiseptic the better, are certain to do much good.

Action of Guaiacol in Tuberculosis. (*Rif. Med.*, August 10, 1892; *British Medical Journal*, October 22, 1892.)

Poggi has carried on a series of investigations with the object of ascertaining in what quantities guaiacol, when given by the mouth, is absorbed. By means of careful chemical examinations of the fæces and urine he has

arrived at the following conclusions: If guaiacol be given by the digestive tract, one gramme *per diem* may be absorbed. In healthy people this amount appeared to be completely absorbed, as hardly any reaction of guaiacol was obtained from the fæces. In the tuberculous its absorption was not so complete as in the healthy. In the above doses guaiacol is well borne, producing neither nausea nor sense of weight in the stomach. The drug is excreted in the urine, not as guaiacol, but as a body giving with bromide-water the reaction of phenol.

After a very elaborate research (*Zeitsch. für klin. Med.*, Bd. xix) into the comparative therapeutic effects on digestion of guaiacol, orexin, acid and pepsin, alkali and pancreatic juice, and pepper, Hemme states that the most important results were obtained from guaiacol, especially in cases of phthisis. The appetite was very considerably and permanently improved. No definite change in the gastric juice was made out, yet at times the acidity of the gastric contents was increased. With orexin there was rarely any increase in the appetite. Owing to its stimulating action on the gastric mucous membrane, the acidity of the gastric juice and the motor activity were in most cases increased. The therapeutic effects in the case of the other agents were either absent or but slightly marked.

Nerium Oleander as a Cardiac Tonic. (*Aertzl. Rundschau*, Nos. 38 and 39; *British Medical Journal*, October 22, 1892.)

In this paper V. Oefele records his clinical investigations with this new drug in seventy-three cases of cardiac disease. The leaves, cortex, and fruit are all active therapeutically. Alcohol dissolves out certain constituents which are irritating to the alimentary tract. The most suitable preparation appears, therefore, to be a concentrated infusion, to which alcohol, or glycerin, may be added to insure stability. Under its use thus prepared, the pulse becomes slower, more regular, and more powerful, and abundant diuresis occurs with increase of the solid urinary constituents. This action appears to be more marked with nerium oleander than with any other member of the digitalis group. Peristalsis is also increased. The writer thinks the drug indicated in cardiac and renal disease. It is contraindicated if vomiting or diarrhœa be present. The daily use of the raw drug is from .05 gramme to 0.5 gramme (about one to seven grains).

Phenosalicylic Acid.—(*Annales de l'Inst. Pasteur*, No. 5, 1892.)—Dr. I. Christmas has noticed that by mixing phenol and salicylic acid, the microbicide power of the product is nearly double that of either separately. He proposes the following mixture, under the name of phenosalicylic acid, which gives an antiseptic almost equal in value to sublimate: Ac. phenic., 9 grammes; ac. salicylic., 1 gramme; ac. lactic., 2 grammes; menthol, 15 grammes. The three acids must be warmed to the point of liquefaction, then mixed. This mixture is very soluble in glycerin, and also in water to the proportion of four per cent.

Resorcinol. (*La Semaine Méd.*, No. 50, 1892.)—Dr. Beclaïew, of Djarkent, Russia, gives this name to a substance which he obtained by fusing together equal parts of resorcin and iodoform. It is an amorphous coffee-colored powder, with the odor of iodine and the taste of iodoform. He found it serviceable in diseases of the skin and in chronic ulceration. It removes itchiness and irritation. It may be used either as a powder or in the form of an ointment with lard.

Orexin Hydrochlorate. (*Gaz. Med. Lombarda*, June, 1892.)—Dr. A. Rizzi states that further research tends to encourage the belief that this drug may yet prove of distinct value in certain cases of failure of the appetite. In healthy subjects he found that it produced a keen sense of hunger and increased both the secretory energy and peristaltic movements of the stomach. In cases of atonic dyspepsia, the author has had equally striking results. Gastralgia, or hyperæsthesia of the gastric mucous membrane, should always be taken as contraindications to its use. It is recommended that the drug be administered in the form of powder enclosed in wafers, and that its ingestion be immediately followed by a draught of water to prevent the drug from remaining confined to a small part of the stomach, and there exercising too strong an irritant action.

The Internal Administration of Ozone in the Treatment of Phthisis. (*New York Medical Journal*, November 5, 1892.) By Henry S. Norris, M.D.

In this paper Dr. Norris calls attention to the value of the internal administration of ozone in certain cases of phthisis. The preparation he has used is "aquozone," a two-and-a-half-volume-per-cent. solution of ozone in water, the stability of which is maintained by the presence of a certain amount of the hypophosphites. The remedy was given in four daily doses of three ounces each, one before each meal, and the fourth at bedtime. At the same time ozonized cod-liver oil containing six volumes per cent. of ozone was administered, half an ounce after each meal. The cases in which it proved most successful were persons under thirty-five years of age, suffering from catarrhal phthisis, where the disease had not passed far into the second stage, was not too active, and was limited to a single lobe, or, if in both lungs, was confined to comparatively small areas. In every case where these conditions existed, the patient's improvement was immediate and progressive. He thinks it possible, from the rapid effects produced upon the secretions in the bronchial tubes, that the ozone may find its way into the circulation, and for this reason he gives the ozone-water as nearly as possible on an empty stomach.

NEUROLOGY.

IN CHARGE OF CHARLES W. BURR, M.D.,

Pathologist to the State Asylum for the Insane, Norristown; Visiting Physician to the Home for Incurables; Visiting Physician to St. Joseph's Hospital, Philadelphia, Pa.

Remarks on the Varieties of Chronic Chorea, and a Report upon Two Families of the Hereditary Form, with One Autopsy. (*Jour. of Nervous and Mental Disease*, February, 1893, p. 97.) By Wm. Osler, M.D.

The author divides chronic chorea into four groups. First, the chorea of infants, appearing either at birth or within the first two or three years of life. Many of these cases are examples of spastic diplegia plus movements, which may be choreiform, tremulous, or athetoid. There is often mental impairment, or even idiocy. The second group includes cases of chronic chorea without inheritance. They are indistinguishable from the variety described by Huntingdon. In the third group, the so-called Huntingdon's chorea, there is marked heredity, the disease occurs in family groups, the onset is late, psychical disturbances always develop, and the course is progressive and fatal. The fourth group comprises cases of chorea minor, which pursue a chronic course, but ultimately recover.

The author reports two families with hereditary chorea. The autopsy findings in the one case examined are not very definite.

Syphilitic Spinal Paralysis. (Ueber syphilitische Spinal Paralysis. *Neurolog. Centralbl.*, March 15, 1892, p. 161.) By Dr. Wm. Erb.

There is quite often met with in syphilitics a condition which superficially resembles spastic paralysis. The development of the disease is slow. There is difficulty in walking, with spastic gait, increased reflexes, and weakness of the bladder. Sensibility is slightly affected. There is no muscular atrophy. The arms, head, and cranial nerves remain unaffected. Electrical reaction remains normal. Intelligence and speech are unaffected. There is a tendency to improvement, especially under specific treatment. The lesion must be situated in the dorsal cord. Most probably there is a partial transverse lesion, symmetrically situated in either half of the cord, and affecting the posterior part of the lateral tract, posterior gray matter, and posterior columns (a specific infiltration of the spinal marrow, or a myelitis depending upon specific arterial disease).

A Case of Bulbar Paralysis without Anatomical Lesion. (Ein Fall von Bulbärlähmung ohne anatomischen Befund. *Neurol. Centralbl.*, March 15, 1892, p. 168.) By H. Senator.

Male, aged forty-one years, after suffering for eight weeks from hoarseness, catarrh, and chills, suddenly lost the power of swallowing and speech. He could not move the tongue at all, and could barely separate the jaws. Shortly after paresis appeared in the right hand, and he could not write.

On examination he could not speak, but intelligence remained intact, since he understood spoken and written words and the use of objects. Slight paresis of the leg. Plantar reflex marked. Patellar reflex increased, especially upon the right side, and foot-clonus present. Cremasteric reflex equal on both sides. Abdominal reflex distinct only on the left. Bladder and rectum normal. No fibrillary twitching. Palsy of both facial nerves. The eyelids cannot be completely closed. Vision, taste, and hearing unaffected. Sensation normal. Pupils normal. Death from phthisis four months later. Macroscopical examination revealed no lesion in brain or cord. Microscopic examination of pons, medulla, facial, hypoglossal, and pneumogastric nerves gave negative results. The author is of opinion that the absence of all sensory changes, especially the preservation of the muscular sense, differentiates the case from those of apoplectic origin. He thinks there was probably a cerebral lesion.

Hysterical Rapid Respiration, with Cases; Peculiar Form of Rupial Skin-Disease in an Hysterical Woman. (*Amer. Jour. Med. Scien.*, March, 1893, p. 235.) By S. Weir Mitchell, M.D.

The first case is one of hysteria extending over many years, and showing remarkable manifestations of the disease. When fifteen years old an hysterical knee-joint appeared after a slight injury. This was cured, but was after some time followed by a long trance, with an *alleged* fast lasting sixty-four days. Recovery was sudden, but left the patient aphonic, and breathing with an average respiration rate of about one hundred and twenty per minute. Breathing was shallow, almost entirely upper costal, and perfectly regular in rhythm. During sleep the rate fell to eighteen or twenty per minute. Tracings of the breathing show perfect regularity, while those of a man in health attempting to simulate such breathing are markedly irregular. Another interesting point in the case was the presence of a remarkable skin lesion. Covering a large part of the anterior aspect of one leg, from above the ankle to below the knee, was a thick, broad crust, resembling very much the bark of an old tree. It was dark gray and much fissured. On removing the crust there was found under it a grayish-white fibrinous material, from the surface of which oozed a little blood. Around the edges the skin was thickened, somewhat hardened and hyperæmic. The area was very sensitive. (The plate shows the condition beautifully.) Dr. Duhring regarded the lesion as an inflammation of the skin and subdermal tissue of a low type, due to aberrations of local nutrition. It is a local manifestation of a general neurotic affection, and not a disease produced by changes in a single nerve or set of nerves. Two other cases of hysterical rapid breathing are detailed. The author formulates the following conclusions in regard to the condition: "The breathing is largely upper costal, sometimes exclusively so. It is exceptional to find the relative share, as between chest and diaphragm, preserved. As a rule, the breathing is slight in amount, that is, superficial, but without appearance of effort. Usually or

early in the case the patient is ignorant of the existence of the symptom. When this knowledge is once acquired, the respiration rate is increased by excitement, even by the mere approach of the nurse or doctor. In certain persons the symptom occurs only just after sleep, and may be quite absent in sleep,—indeed, it is usually so. In some cases this symptom is almost the only distinct expression of hysteria, or is not present at all until the patient is emotionally excited. The number of respirations goes up and down rapidly, and without any marked coincidental change of pulse. This type of breathing is not a possible voluntary product. Cases in males are more rare, and cannot always be with certainty regarded as hysterical."

Pre-Ataxic Tabes Dorsalis, with Optic Nerve Atrophy. (*Medical News*, March 26, 1892.) By Howell T. Pershing, M.D.

Two cases of tabes with marked optic atrophy but with very unobtrusive spinal symptoms are reported, and a careful study is made of a series of cases of tabes from the literature to determine whether this condition prevents the occurrence of other symptoms. The author tends to the view that such is the case,—that is, that when there is decided optic atrophy there may be, and may continue to be, absence of ataxia, and even of Romberg's symptom. He also considers the question as to whether degeneration of the auditory nerve is more frequent in non-ataxic cases, and concludes that it appears to be so.

PEDIATRICS.

IN CHARGE OF T. M. ROTCH, M.D.,

Assistant Professor of Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

ASSISTED BY

E. M. BUCKINGHAM, M.D.,

Instructor in Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

Two Cases of Poisoning by the Fruits of Belladonna and of Datura Stramonium. (Bucharest, from *Revue Mensuelle des Maladies de l'Enfance*, January, 1893, p. 30.) By Dr. E. Mirinesen.

Two children, a girl of eight and a boy of five years, had eaten about seven P.M. certain fruit resembling small black cherries, but garnished with spines. At nine P.M. both children were restless and incoherent. They were treated with a purgative and milk, after which they vomited and passed green stools. During the night both were restless and delirious.

In the morning the girl was restless, frightened, and had hallucinations; speech was quick, and there were automatic movements; her gait was tremulous, and she threw herself about the bed; the eyes were injected, with dilated pupils not reacting to light, and without power of accommodation; the pulse was strong, 144, and regular; the skin and the mucous membrane

of the mouth were dry and red, and ecchymoses existed on the body. The boy at this time presented much the same phenomena, but in greater degree; he could not walk at all, and there were strong contractions, especially of the lower limbs. Each child now received a large dose of castor oil, and, by subcutaneous injection, one centigramme of pilocarpine.

At the evening visit, the boy was tranquilly asleep, with a pulse of 120 and temperature of 38° C. Both children had had abundant stools; the girl was much less agitated, and could walk without difficulty; her psychical phenomena had disappeared; there was some accommodation in the eyes, but the pupils reacted only slightly to light. Her pulse was 122 and temperature 37.5° C. On the following morning both children were quite recovered. It was learned that belladonna and stramonium were the fruits eaten.

Experiments on man and on animals by Schroff, Lichtenfels, Fröhlich, and Hirtz show that—

(1) A small dose of belladonna diminishes the pulse.

(2) A large dose accelerates the pulse, therefore this is a bad symptom.

(3) Psychical disturbances are caused by a large dose, but death is rare.

The author believes that these children did not absorb a large dose, because of their early vomiting and stools, and because the symptoms disappeared so soon. Even mydriasis lasted barely thirty-seven hours. He explains the psychical phenomena by the great susceptibility of the nervous system of the child, and possibly by the fact that the stomach was empty when the poison was taken. He quotes Trousseau and Meuriot as follows: "The effects of atropia vary in different species. In man it is a violent poison. The effects differ with the dose. Small doses accelerate the heart and augment the tension of the vessels. Toxic doses lessen the tension of the vessels and weaken the heart. A small dose hastens the respiration; a large one exaggerates reflexes to the point of causing convulsions. Toxic doses produce coma. Restlessness, insomnia, and delirium are the effect of a therapeutic dose at the beginning of a toxic dose before absorption is complete. Small doses heighten and toxic doses lessen temperature."

Syphilis of the Liver. Exploratory Incision; Recovery. (*Société Anatomique*, November 4, 1892. *Revue Mensuelle des Mal. de l'Enfance*, January, 1893, p. 33.)

An infant of two and a half years had had for a year ascites with enlarged liver. He was cachectic and pale yellow, without actual icterus. The liver descended into the right iliac fossa, its inferior border describing a curve with the convexity upward, the surface smooth, and the consistence firm. Syphilis had been rejected as a diagnosis; and suspecting a cyst, M. Debet made an exploratory laparotomy. The tumor proved to be the liver itself; its color was light, but marbled with purple. The gall-duct was normal. A mass of hypertrophied glands was found in the gastro-hepatic

omentum near the foramen of Winslow. A series of swellings resembling glands, one of which was removed for microscopic examination, were found under the parietal peritoneum. Two or three punctures were made in the liver without bringing away anything. On the third day the child recovered his appetite that had been lost for some days, and before the sutures were removed it was hard to keep him in bed. He was soon after playing with other children, as he had not done for a long time.

Afterwards the liver diminished in size, disappearing under the false ribs in the course of two months. About four months after operation, syphilis was suggested by the appearance of the gums.

Croupous (Fibrinous, Lobar) Pneumonia. (*Archives of Pediatrics*, January, 1893, p. 87; from *Arch. f. Kinderh.*, 1892, xiii. 286.) By Baginsky.

Thirty cases are reported from the K. und K. Friedreich Children's Hospital. The ages were from one to twelve years, two were under a year, and eight in the third year. In five cases pneumonia was double, and in each of these cases the backs of the lower lobes were the parts affected. Six times the left lower lobe; once the left upper; nine times the right upper and middle lobes, the axillary region being particularly affected; six times the right lower lobe; three times the right middle and lower lobes were the parts diseased. No one of the thirty patients died. It is concluded from this report that antipyretics should be used with children only so far as to cause no weakening of the heart-muscle. Great care should be used with such antipyretics as weaken the heart or act unfavorably on the blood-corpuscles. The harmful effects of antipyretics should be lessened by means to sustain the strength of the heart. The use of cold water is the best antipyretic with children. Baths of 68°–76° F., or sheets wrung out in water of 60°–70° F., are the best means of giving it.

Gastric Ulcer in a Child two and a half Years Old. (*Archives of Pediatrics*, January, 1893, p. 90; from *Medical News*, 1892, lxi. 408.) By Dr. J. F. E. Colgan.

A girl of two and one-half years, when first seen had stertorous respiration. All the voluntary muscles were contracted, and there were involuntary evacuations of urine and fæces. Her pulse was about 150, rather full and tense, and her temperature was 106°.

This child had appeared perfectly well until about an hour before her death, when she said she did not feel well. There was no vomiting and no complaint of pain, but consciousness was soon lost. Her convulsions were readily controlled, and consciousness was beginning to return, when another convulsion occurred, apparently limited to the diaphragm, and this one terminated fatally. Autopsy showed a perforating ulcer of the stomach, situated on the posterior wall at the cardiac extremity, close to the greater curvature. In some places there was an entire loss of substance, the floor of the ulcer being made up only of peritoneum. There was thicken-

ing of other parts of the stomach, especially on the anterior wall, extending to the lesser curvature.

The cause of this ulcer was, probably, chronic gastric catarrh. The stomach was thickened in several places, and this thickening involved the mucous membrane.

A Peculiar Form of Nystagmus (Cheyne-Stokes Nystagmus), with a Case. (*Boston Med. and Surg. Journal*, September 29, 1892.) By W. N. Bullard and A. H. Wentworth.

The peculiarity of the form of nystagmus in question consists in its rhythm, which is precisely similar to that in Cheyne-Stokes respiration. The case was a rickety patient, the infant of highly emotional parents, one of whom was insane. There was no Cheyne-Stokes respiration in this case. After a review of theories relating to nystagmus as commonly seen and those relating to Cheyne-Stokes respiration, the authors present a theory as to Cheyne-Stokes nystagmus, which is summed up in the paper as follows:

(1) This nystagmus is analogous to that form of respiration known as Cheyne-Stokes, and is probably produced by analogous causes.

(2) The most probable theory in regard to its production is, that it is the result of a constant or chronic irritation of the motor ocular centres, occurring at a time when these centres are depressed, and so weakened as to be irritable in their response.

SURGERY.

IN CHARGE OF B. FARQUHAR CURTIS, M.D.,
Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

Injury to the Pancreas, a Cause of Effusions into the Lesser Peritoneal Cavity. (*British Medical Journal*, 1892, ii. 1051.) By Jordan Lloyd, M.B., M.S., F.R.C.S.

Lloyd reports two cases of injury to the pancreas followed by the formation of a cystic tumor containing a dark fluid, altered blood, in one case evidently containing constituents of the pancreatic juice, which he believes to have been cases of effusion into the lesser peritoneal cavity. He thinks that some recorded cases of cysts of the pancreas may be explained in this way, especially as their frequent occurrence after an injury has been noted. He remarks that similar effusions might result from perforation of the stomach, the biliary passages (he has observed one case after perforation of the cystic duct), the colon, and abscesses of the liver, etc. If there is accompanying injury to a duct of the pancreas, its juice will be found in the fluid. The main symptom of this condition is the presence of a tumor in the left hypochondriac, epigastric, and umbilical regions, varying in size and shape according to the condition of the stomach which overlaps it,

lying above the colon, perhaps giving dulness posteriorly, and moving with respiration. Pain is uncertain and paroxysmal, vomiting is usual, emaciation and anæmia are marked, the temperature may be subnormal, the heart may be lifted so that its apex-beat will be found in the fourth interspace, and its pulsation may be communicated to the swelling. The shape of the swelling is characteristic. The treatment should be anterior incision and drainage. One of his cases recovered after operation.

Excision of Cancer of the Rectum. (*N. Y. Medical Journal*, 1892, ii. 253.) By Andrew J. McCosh, M.D.

McCosh reports five cases of excision of the rectum, all recovering, of various grades of severity, and then describes the different methods of operating upon such cases. He favors extirpation rather than colotomy when the disease is within reach, even if the sacrum has to be resected and the peritoneal cavity opened. In four hundred and thirty-nine cases reported by various experienced operators, the mortality was nineteen per cent., and of three hundred and seventy-five cases, eleven per cent. were cured four years after the operation. Even recurrence does not render recovery hopeless, as some cases have been finally cured after four or five operations. With regard to the functional results, he states that the control over the movements is no better than in colotomy, although with the advantage that the opening is in the normal situation. Even when recurrence takes place, the patients have a long life and are more comfortable than after colotomy.

The Choice between Extirpation and Colotomy in Cancer of the Rectum. (*N. Y. Medical Journal*, 1892, ii. 538.) By Charles B. Kelsey, M.D.

After a very fair discussion of the advantages of extirpation and colotomy for cancer of the rectum, Kelsey decides as follows: 1. Excision has a very limited range of application. 2. Kraske's method has enlarged the scope of the operation, but not improved the results. 3. Colotomy is almost free from risk, and will give a longer length of comfortable life. 4. Even in non-malignant stricture, the advantages of excision over colotomy are not sufficient to justify the increased risk in grave cases requiring extensive operation.

Ligation of the First Portion of the Left Subclavian Artery, with Excision of a Subclavian-Axillary Aneurism. (*Johns Hopkins Hospital Bulletin*, July–August, 1892, p. 93.) By W. B. Halstead, M.D.

Halstead has had a successful case which deserves brief notice. A colored man, fifty-two years old, noticed, eight months before admission to the Johns Hopkins Hospital, a pulsating swelling under the left clavicle, which grew steadily. On admission there was found a spherical tumor, forty-two centimetres in circumference at the base, overlapping the clavicle

above, and touching the fourth rib below, pulsating feebly, covered with normal skin. No pulse could be felt in the arm or at the wrist, but the limb was not swollen or even cold. Extirpation was decided upon, and the skin was dissected up in flaps, two ligatures placed on the first portion of the subclavian artery, and the vessel divided. It lay underneath the vein and was entirely concealed by it. The deltoid muscle was then divided and the clavicle sawn through, two and a half centimetres from its outer end, and the remainder of the bone removed with the sac, as it was so adherent to it that separation was considered dangerous. The axillary artery was tied at the beginning of its second portion. The operation lasted three and one-half hours. Primary union was obtained, and at no time was there any evidence of disturbed circulation in the arm.

Habitual Dislocation of the Shoulder-Joint treated by Suture of the Capsule. (Du traitement des luxations récidivantes de l'épaule par la suture de la capsule. *Gaz. des Hôpitaux*, 1892, p. 1176.) By M. Ricard.

Ricard reports two successful cases of operation for habitual dislocation of the shoulder-joint by a new method, consisting in exposing the capsule by turning down the deltoid, freeing the upper and lower borders of the subscapularis so as to fully expose the capsule, and passing through the latter and through the thickness of the subscapularis three stout silk sutures, placed vertically, about two centimetres apart, the ends of these sutures being then tied two and two, so as to make a thick fold of the anterior surface of the capsule in front of the joint. The arm should be strongly carried inward during this part of the operation. The deltoid is restored to its place, and the wound closed without drainage. The two cases reported were still in good condition nine and three months after operation.

Plastic Surgery of the Bones. (Ueber Osteoplastik in klinischer und experimenteller Beziehung. *Archiv f. klin. Chirurgie*, xlv., 1893, p. 401.) By Dr. A. Schmitt.

Schmitt has made a very thorough study of the methods of healing and the results after plastic bone-operations, with a review of the work by others, a considerable number of experiments upon animals, and some clinical experience in Bergmann's clinic. He finds considerable contradiction in the claims made by various authors, especially as to the continued life of bone transplanted from one species to another. His conclusions are as follows:

1. Foreign bodies of any kind and of considerable size may be made to heal in under favorable circumstances, especially with asepsis.

2. Such healing in will remain permanent so long as the foreign body is not required to take part in the function of the limb, otherwise it is terminated by the extrusion of the foreign body, unless the latter has been already absorbed. Absorbable substances do not hasten the filling of a gap

in the bones by reproduction, for the latter depends upon the periosteum and somewhat upon the medullary cavity. In some cases this insertion appears to retard bone reproduction.

3. Living bone of another species is always absorbed or encapsulated, and never becomes united by bone to the parts about it, or continues in life.

4. Living bone of the same species will sometimes live and unite, especially if its periosteum is preserved, but usually it is encapsulated or absorbed.

5. The use of bone from the same individual is the only sure way of obtaining a bony filling for cavities or bony union, and if possible the periosteum should be preserved,—best by leaving the bone like a flap in continuity with the soft parts.

[While agreeing in the main with the above, the reviewer feels compelled to emphasize the fact that both clinical and experimental evidence by good men is on record which contradicts the third conclusion, as well as the last two sentences of the second, for decalcified bone implantation certainly shortens wound-treatment and apparently hastens ossification.]

Plaster of Paris as a Means of filling Defects in Bone. (Ueber Knochenplombierung. *Beiträge zur klin. Chirurgie*, ix., 1892, p. 804.) By Dr. H. Dreesmann.

Dreesmann filled cavities in bones (chiefly of small size) with plaster of Paris, closing the soft parts over it, in eight cases, and succeeded in healing six without fistula. The plaster was mixed with a one to twenty carbolic acid solution. The bone cavities after thorough mechanical removal of infected tissue were filled with olive oil, and the latter heated by plunging into it the tip of the thermo-cautery. The practical advantages of the method over decalcified bone implantation seem doubtful, although the earliest cases remained well when last seen, six months after operation.

GENITO-URINARY SURGERY.

IN CHARGE OF WILLIAM K. OTIS, M.D.,
New York.

Methyl Blue in Cystoscopic Diagnosis. (Ein Versuch den Harn zu diagnostischen Zwecken mit Methylenblau zu farven. *Deut. Med. Wochensch.*, No. 48, 1892.) By Kutner.

This author has utilized the fact that methyl blue is excreted by the kidney unchanged, and therefore gives a pronounced coloration to the urine, to facilitate the discovery and examination of the ureters in cystoscopic examinations. His method is to exhibit from fifty to seventy centigrammes of methyl blue two or three hours before the examination, by which time the urine will have become deeply colored. The bladder is then thoroughly

washed and filled with a clear solution of boric acid, when the colored fluid ejected from the ureteral orifices is very easily observed. The passage of the blue dye through the kidney does not deprive it of its power to color living cells, so that the epithelium at the base of the bladder soon becomes deeply stained. In view of the fact that at times the openings of the ureters are extremely difficult to find, even after the bladder has been opened, it is probable in such cases that this method will prove of great assistance.

Diagnosis of Syphilitic Re-Infection. (*Merck's Bulletin*, March, 1893.) By Dr. Clement Petit.

The majority of instances of syphilitic relapse observed up to the present time are not conclusively authenticated. But medical literature becomes enriched from time to time by new instances; which, however rare they may be, are largely in favor of the theory of re-infection. Some are incontestable.

There have been observed the following sequences:

1. An indisputable primary syphilis with hard chancre, a group of inguinal glands, roseola, mucous plaques, etc.

2. A complete intermission of several years; or, only some tertiary accidents.

3. A new hard chancre; with characteristic glandular disorders, followed by incontestable accidents.

There are some indisputable facts of syphilitic re-infection in persons having hereditary syphilis. But there are many causes of error which may induce an erroneous diagnosis.

Some Indications for External Urethrotomy. (*Boston Medical and Surgical Journal*, March 2, 1893.)

This author considers that external perineal urethrotomy gives the best bladder drainage; it allows old cicatricial deposits about the urethra to soften down better and more quickly than by any other method; it probably assures the best permanent results in deep strictures; it allows a swollen, lacerated prostate to shrink and quiet down quickly; it pacifies an irritable bladder; it may stop vesical bleeding; it is rarely, if ever, amiss in case suprapubic cystotomy is found necessary, and in many cases it is the best route to the bladder and prostate; it is not contraindicated with internal urethrotomy or where any operation is demanded, in renal disease, and ordinarily with modern asepsis it does not confine a patient in bed over a week; it allows a definite, positive or negative diagnosis in most instances, and in pathological cases it is rarely a difficult operation.

Perineal Operations on the Prostate, with a Brief Report of a New Method of Removing the Lateral Lobes. (*Jour. Cut. and Genito-Urinary Diseases*, December, 1892.) By William N. Wishard, A.M., M.D.

Dr. Wishard has been remarkably successful in removing enlarged lateral lobes of the prostate through a perineal incision.

In twelve cases in which he has made a perineal without a suprapubic incision, nine have recovered with complete restoration of bladder function. One was not benefited by the operation and two died. Of two, where combined suprapubic and perineal incision was made, one died from shock and one made a perfect recovery.

If one may presume to formulate any suggestions as to the indications favoring perineal incision, it would appear that the lower death-rate as shown by Belfield's statistics would favor the perineal opening,—*first*, in cases where the condition of the patient is such as to imperatively demand the least possible shock ; *second*, in cases where there is not great elongation of the prostatic urethra as determined in the manner above suggested. The mechanical value of a perineal incision, however, would appear to obtain chiefly in cases not associated with great elongation of the prostatic urethra and in the division or removal of portions of so-called prostatic bars or collar-shaped growths, and for the removal of median or other growths about the vesical orifice or within the prostatic canal. It may perhaps also answer in certain cases for the removal of the lateral lobes if experience does not show this to be injurious to the canal.

ORTHOPÆDICS.

IN CHARGE OF REGINALD H. SAYRE, M.D.,
Assistant to the Chair of Orthopædic Surgery, Bellevue Hospital Medical College, New York.

Notes on Two Cases of Congenital Club-Hand. (Note sur deux Cas de Mains botes d'Origine congénitale. *Revue d'Orthopédie*, March, 1892.) Par MM. E. Kermisson et Raymond Sainton.

Kermisson has met with two cases of club-hand, in one of which both hands were affected, thus making practically three cases. The first case died in a few months, and he reports the autopsy. In the *Revue d'Orthopédie*, January, 1893, in connection with M. Longuet, he reports the autopsy of the case of unilateral club-hand which died since his first report. Both cases showed an arrest of development of the whole upper extremity, various portions of the skeleton being missing, and the muscles, nerves, and blood-vessels being, to a greater or less extent, anomalous in consequence. In the double case, the radius was present but defective in its development, being much shorter than the ulnar, and not articulating with it at its lower extremity, so that supination and pronation were absent. The hand articulated with both bones, but the capsule of the joint was very loose. The trapezoid and trapezium were wanting, and the shape of the other bones of the carpus not normal. The remaining bones of the hand were present, but many of them small and distorted. There was a permanent flexion of the first phalanx of the fourth digit upon the second, which was due to contraction of the flexor tendons.

In the unilateral case there was complete absence of the radius and of the thumb, including the scaphoid, semilunar, and trapezoid. The bones of the index finger were atrophied.

Many of the muscles of the forearm were shrunken and atrophied, while many more were absent. Both these cases belong in the third class of Bouvier, who published in 1871, in the *Dictionnaire Encyclopédique*, the most exhaustive treatise that has been written on this subject. These cases are very rare, only thirty-nine having been reported up to 1891, according to Hoffa; and a large number of these have died so young, as in the two cases here reported, that treatment was useless.

Lateral Deviations of the Spine in Pott's Disease. (Déviations latérales du Rachis dans le Mal de Pott. *Revue d'Orthopédie*, January, 1893.) Par G. Phocas.

The author reports three cases of Pott's disease, in which the differential diagnosis from lateral curvature was made with difficulty,—in one case, in fact, not being made until the boy had been exercising for some time with a view to overcoming his lateral curvature, which proceeding was followed by pain in the legs and the appearance of a knuckle in the dorso-lumbar spine. He calls attention to the fact that Bouvier, in 1856, spoke of the possibility of confounding these two conditions, and said that he had committed the mistake himself in his early practice.

Irreducible Ischio-pubic Dislocation of the Femur. (Luxation ischio-pubienne irréductible. *Revue d'Orthopédie*, January, 1893.) Par M. Tillaux.

The author reports a case of irreducible ischio-pubic dislocation of the head of the femur of four months' standing. The man fell on his back, and the wheel of a carriage passed over his pelvis. The position, when seen by Tillaux, was flexion 60°, abduction, rotation outward; walking was only possible with two canes, and then only for a few steps.

Under an anæsthetic efforts at reduction were futile, and an incision was made behind the thigh, parallel with the tendon of the adductor magnus, beginning at the genito-crural fold, which led directly to the neck of the femur. Efforts to dislodge the head were unsuccessful, so the neck of the femur was cut through and removed, and the neck placed in the acetabulum, which did not require to be gouged out.

The patient made a good recovery, and after four months was discharged, walking well without a limp, having no appreciable shortening, rotation normal, flexion to a right angle, abduction and adduction to same extent as the opposite side.

OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF JOHN M. KEATING, M.D., LL.D.,
Colorado Springs, Colorado; Fellow of College of Physicians of Philadelphia; Gynæcologist (Emeritus) to St. Agnes's Hospital, Philadelphia; formerly Visiting Obstetrician to the Philadelphia Hospital (Blockley); Editor "Cyclopædia of the Diseases of Children," etc.

Iodine in Intra-Uterine Injections. (*Archives of Gynæcology, Obstetrics, and Pediatrics*, January, 1893.)—Dr. Gördes reports in *Centralblatt f. Gyn.* a case in which colicky pains and tetanic spasms supervened upon the intra-uterine injection of iodine. The patient suffered from chronic endometritis, for which the curette was used. Six days later a slight transient hemorrhage occurred. Twenty-six hours after the cessation of the latter the author injected iodine tincture for the purpose of stimulating the granulating endometrium. Ten minutes later the patient's countenance was livid gray, the pulse 126 and scarcely perceptible, the respiration heavy, and there were severe colicky pains; besides, a general feeling of stiffness was present, and the thumbs were extended and abducted. A hypodermic injection of morphine was given, and it immediately relieved the symptoms. On the following morning the urine contained albumen. The patient made a speedy recovery. Dr. Gördes is of the opinion that the tetanic symptoms were the reflex results of the colic; he does not believe that any of the iodine entered the circulation through an open uterine vein.

Protracted Hemorrhage following Abortion. (*Archives of Gynæcology, Obstetrics, and Pediatrics*, January, 1893.)—Grossman says that hemorrhages following abortions caused by a circumscribed tumor, deciduoma, diffuse proliferation in the endometrium or endometritis decidualis, which hemorrhages prove rebellious to all other treatment, yield promptly to curetting the uterus. The author believes that this operation should be performed by all general practitioners. Grossman curetted nearly fifty such cases without general anæsthesia. The following is his technique: He has the external genitals thoroughly washed with soap and water, places the patient on her back, and thoroughly disinfects. He copiously washes out the vagina with a one-per-cent. solution of creolin, and lines it with pledgets of cotton. Then he soaks cotton or strips of gauze in a twenty-per-cent. solution of cocaine and inserts them into the vagina, leaving them there for from five to ten minutes. After the removal of the cotton or gauze he grasps the anterior lip of the wound through the speculum, and, slightly drawing the womb forward, he introduces a Bozemann's catheter and washes out the uterus with creolin. Immediately thereafter he inserts into the womb a Braun's syringe enveloped with cotton and filled with a twenty-per-cent. solution of cocaine, which is injected while slowly passing the syringe upward. This solution is allowed to act from five to ten minutes. While this does not always produce complete local anæsthesia, it induces sufficient analgesia to warrant proceeding with the operation. The author

then inserts a small uterine curette, and scrapes the endometrium, beginning with the posterior wall, then scraping the anterior wall, and finally the angles of insertion of the Fallopian tubes. The scraping is done with gentle motions, but with sufficient force to produce an appreciable, even audible, sound. This rarely increases the bleeding, which promptly yields to hot water irrigation. After the operation a bit of iodoform gauze is placed before the os. The author never experienced any unfavorable results from the operation.—*Münchener medicinische Wochenschrift*, No. 22, 1892.

Subinvolution of the Uterus. (*Archives of Gynæcology, Obstetrics, and Pediatrics*, January, 1893.)—*Remote causes:* 1. Uterine inertia during labor, which may depend upon weakness of the uterine muscle itself, or upon general lack of muscular tone, such as often accompanies tuberculous conditions of the system. 2. Frequently repeated deliveries exhaust the tonicity or contractility of the muscle fibre, and are thus powerful predisposing causes of subinvolution. *Exciting causes:* 1. Too early rising after delivery. 2. Lacerations of the cervix are most potent and frequent causes of subinvolution. 3. Pre-existing endometritis, tumor, or neoplasms will prove potent in preventing complete involution. 4. Retained membranes or portions of placental tissue are causes, both by their mechanical action and their irritants. 5. Abortions are frequently causes, and probably for two reasons: first, that women are too anxious to get up soon, and do not allow the process of involution to become thoroughly established; and, second, because the process of involution is not as easily established in a rapidly-growing uterus. 6. Puerperal sepsis is very generally followed by subinvolution. 7. Lacerations of the perineum, by disturbing the vascular equilibrium of the perineum and peri-vaginal tissues, act as direct causes of subinvolution.—*Boise, Annals of Gyn. and Ped.*, October, 1892.

Fissures of the Nipple. (*Rev. Méd.-Chirur. des Mal. des Femmes; Archives of Gynæcology, Obstetrics, and Pediatrics*, January, 1893.)—Vinary recommends the following application for cracked or fissured nipples:

℞ Aristol, ʒiv;
Vaseline (liq.), ʒxx.—M.

Sig.—Paint the nipple with a camel's-hair pencil dipped in this liquid after each nursing. Care should be taken to pinch the base of the nipple to expose the papillæ and discover all the cracks or fissures.

A Case of Bilateral Tubal Pregnancy. (*Archives of Gynæcology, Obstetrics, and Pediatrics*, January, 1893.)—In this patient a right-sided ectopic gestation was diagnosed in June, 1890, but she refused operation. At the end of October, 1891, there were signs and symptoms of a similar condition on the left side. Abdominal section was performed. A gestation cyst of the size of a goose-egg was removed from the left side; and on the right side, surrounded by matter, intestines, etc., was a cavity in which the

right oviduct ended, and in which small fœtal bones were found. The patient recovered well.—*Zeitschrift für Geburtshilfe und Gynäkologie,* Bund xxiii., 1890.

OPHTHALMOLOGY AND OTOLOGY.

IN CHARGE OF J. E. HARPER, A.M., M.D.,
Chicago, Illinois.

Ocular Headache.—Dr. Casey A. Wood (*Chicago Medical Recorder,* December, 1892) divides ocular headaches into seven classes, according to their frequency of occurrence: (1) the supra-orbital, (2) the deep orbital, (3) the intra-cranial, (4) the temporal, (5) the supra-nasal, (6) the vertical, and (7) the occipital. All sorts of variations and combinations of these are met with. The exciting causes, aside from acute and chronic diseases, are those tasks which require the use of accommodation and convergence.

It sometimes happens that the pain does not come on until the next morning after indulgence, but as a rule the eye and head commence to ache after a certain number of minutes or hours of close work, with such regularity that the sufferer attributes it at once to some trouble with the eyes. Astigmatic hypermetropic and heterophoric patients also suffer when called upon to use their eyes much for distant vision. Ocular headaches are ordinarily by signs and symptoms easily referred to the eyes. The eye may appear, so far as symptoms and the results of inspection go, to be entirely free from disease. If the so-called nervous headaches are accompanied by refractive errors, their correction rarely produces a complete or lasting cure. In those cases where vision is not, and, in the nature of things, cannot be made normal, headache produced by eye-strain is incurable.

The Antiseptic Dropper. (*Medical News,* December 3, 1892.)—Dr. George M. Gould has invented a combination glass stopper and dropper. By making the rubber bulb round or flattened instead of oblong, only the index finger is used to compress or depress it, while the thumb and second finger hold the dropper below. Perhaps the most effectual plan is to stretch a flat, flexible membrane of rubber across the dropper like a drum-head, and by depressing this with the index finger the few drops required are sucked into the point of the pipette or expelled from it.

A Case of Homatropine Susceptibility.—Dr. George M. Gould (*Medical News,* January 21, 1893) reports a case in which the instillation of a quantity of an eight-grain solution of homatropine, not exceeding two drops, resulted in great swelling of the lids; the cheeks for two inches below the eyes were puffy and discolored. The skin of the back, chest, arms, and legs was erythematous, and there was general prickly heat, with

great itching. The effects passed off in twenty-four hours. Similar symptoms had been produced by belladonna plasters.

The Mydriatics in Ophthalmology.—In an article under this head (*University Medical Magazine*, January, 1893) Dr. S. D. Risley classified the purposes for which mydriatics are used, as follows:

1. As simple dilators of the pupil for the purpose of better examination of the structures behind the iris. 2. In the treatment of a large group of inflammations of the ocular tunics. 3. For the paralysis of the accommodation. For examining the eye he usually resorts to homatropine or cocaine, or a combination of them.

In the treatment of inflammations, abrasions of the cornea, severe traumatisms, in keratitis, phlyctenular disease, iritis, etc., he prefers atropine. Where the injury to the cornea is slight, and healing will occur rapidly, homatropine is used.

In speaking of the use of mydriatics to correct errors in refraction, he opposes the currently received idea that they are harmful and unnecessary after forty years of age. He uses them freely after this age, and finds them necessary commonly until after fifty. In cases where there is no retino-choroidal irritation, he uses homatropine hydrobromate in an eight-grain solution, instilling one or two drops every fifteen minutes for an hour. Sometimes he uses a four-per-cent. solution of cocaine with it. The author prefers a two-grain solution of hyoscyamine to either duboisine or homatropine in the average case of asthenopia.

The Treatment of Purulent Conjunctivitis.—Dr. A. A. Foucher (*Annals of Ophthalmology and Otology*, January, 1893) uses nitrate of silver solution of a strength not less than five nor more than fifteen grains to the ounce; but he does not apply it until the lid can be everted easily and without much pain to the patient. The applications are limited to the palpebral conjunctiva, and are made twice a day. As an antiseptic wash, he uses a saturated solution of boracic acid, and cleanses the eyes as often as necessary. He thinks favorably of the 1–1500 solution of cyanide of mercury, to which has been added a small portion of chloride of lime. The application of cold to the lids during the first period he regards as highly important, and with the antiseptic washes is the only treatment used during the first period. He applies the ice directly to the lids, which shortens the stage of tumefaction, and enables the silver solution to be used that much earlier. As the chemosis constitutes the greatest danger to the cornea, its relief is very important, and the ice to the lids is the quickest and most reliable method of securing this.

He has never found it necessary to incise the lids to relieve constriction or to scarify a fleshy chemosis, but occasionally has drawn blood from the temples as a secondary resource. Corneal complications have been rare and trifling in his practice.

DISEASES OF THE LARYNX, NOSE, AND SURROUNDING STRUCTURES.

IN CHARGE OF J. PAYSON CLARK, M.D.,

Physician to the Throat Department of the Boston Dispensary; Assistant Physician for Diseases of the Throat, Massachusetts General Hospital.

Naso-Pharyngeal Lesions due to Central Vaso-Motor Causes. (*Journal of American Medical Association*, October 29, 1892.) By R. W. Seiss, M.D.

There are certain forms of "nervous coryza," including some types of obstructive enlargement of the turbinated tissues, recurrent engorgement of the lateral pharyngeal walls, not dependent on inflammatory causes, various forms of pharyngeal and lingual varix, all of which conditions may be classed among the angio-neuroses. "Nervous coryza" resembles in its various phases hay-fever, and may be due to purely mental factors,—anxiety, fright, mental over-exertion, emotional excitement of any kind. Almost all these patients complain of troublesome cardiac action, cold extremities, headache, etc.

Treatment in these cases should be largely devoted to the nervous system. Climatic change, rest, systematic out-door exercise, regulated bathings, friction, massage, and general faradization are all useful. Strychnine and the bromides frequently act well. Operative procedures in the nose should be resorted to cautiously and only when absolutely necessary. Benzoate of sodium (ten to twenty grains to the ounce) as a spray is sedative. Menthol (ten to thirty grains to the ounce) directly applied to areas of paræsthesia is most beneficial. All irritants, depressants, and abnormal vaso-motor excitements are to be avoided.

Remarks on "Plaque-Cicatrices" (Leucoplakia) of the Mouth and their Causes. (*Münch. Med. Wochenschrift*, October 18, 1892.)—Dr. W. Erb has collected two hundred and forty of these cases among many thousand patients seen by him. He gives them the above name because he takes them to be, as a rule, epithelial thickening resulting from mucous patches. Of the two hundred and forty cases only two were women, both syphilitic. Four grades of the affection are recognized: 1. Very slight changes at the corner of the mouth, generally unilateral, consisting of a dull, dry appearance, with very slight epithelial thickening. 2. Appearances more marked, thickening greater, white coloration. Similar small patches on mucous membrane of cheek, lips, and tongue. 3. More extensive patches, with intense white enamel-like appearance, on angle of mouth, in cheeks and lips. The tongue shows everywhere white opaline spots, and often small cracks, thin, minute painful ulcers, which come and go. 4. Changes most marked in the tongue. The whole upper surface is smooth, shining, enamelled in spots, the papillæ gone. In the largest proportion of cases the angle of the mouth, alone or together with some other part,

was affected; the tongue alone in nine cases, the lips alone in three. In about eighty per cent. of the cases a syphilitic affection had existed. In many of the others there was a strong suspicion of earlier infection, so that the per cent. of non-infected cases could probably be reduced somewhat. The conclusion is therefore justified that syphilis is a cause of leucoplakia. In four or five cases anti-syphilitic treatment either cured or much improved the condition, even after it had existed a long time. Since, however, in from one-tenth to one-fifth of the cases no history of syphilis was obtainable, some other cause must be sought. The only one that offers is tobacco-smoking. Of one hundred and forty-eight cases questioned as to this point, forty-seven smoked little, or not at all; one hundred and one smoked moderately, two excessively. Syphilis alone occurred in thirty-six of these cases, smoking alone in thirty-seven, syphilis and smoking in sixty-four, neither in eleven.

The conclusions are that,—1. Syphilis or smoking alone may be the cause of this condition in about the same proportion of cases. 2. In the greater number of cases it is to be referred to both. 3. It appears very seldom without one or the other cause. Other irritants play only a minor part. In view of the number of syphilitics and smokers who never develop this affection, a certain predisposition must be assumed.

Two Cases of Laryngectomy for Adeno-Sarcoma of the Larynx. (*New York Medical Journal*, November 12.) By J. Solis-Cohen, M.D.

Case I. was an intrinsic adeno-sarcoma of the left half of the larynx. Tracheotomy was performed, followed by unilateral modified laryngectomy under ether. Death followed in forty-eight hours from inspiratory pneumonitis. Pneumonia of influenza was very prevalent at the time. Case II. was a similar growth at the site of a papilloma removed sixteen years previously. Laryngectomy was performed, with preservation of the epiglottis. Nourishment was given by enemata for four or five days; then gradually food was given by the mouth. An interesting point in this case was the development of the malignant growth on the site of a previously-extirpated papilloma. There was no immediate transformation in this instance, more than ten years having elapsed without recurrence of symptoms, and five or six years more before the recognition of malignancy. Both patients were men.

Case of Papilloma of the Larynx. (*Journal of American Medical Association*, October 22, 1892.)—F. E. Waxham reports a case of papilloma of the larynx in which the child, a boy of six years and a half, has worn an intubation-tube for four years. The laryngeal symptoms began at a year and a half, after an attack of measles. At the age of two and a half intubation was found necessary on account of dyspnœa. Early attempts to remove the tube were followed by dyspnœa. Applications of chromic acid resulted in adhesions, so that tracheotomy was necessitated. Laryn-

gotomy was performed, the adhesions broken up, and portions of papilloma still remaining removed. Adhesions formed again. Smallest size intubation-tube was then introduced, and left in place above tracheotomy-tube. Longer intubation-tubes were gradually substituted. At the end of two years the tracheotomy-tube was removed. The boy is strong and well, and as the larynx increases in size it is hoped there will be room enough for normal respiration.

DERMATOLOGY.

IN CHARGE OF W. A. HARDAWAY, A.M., M.D.,
Professor of Skin Diseases in the Missouri Medical College, St. Louis.
ASSISTED BY
C. F. HERSMAN, A.M., M.D.,
St. Louis.

A New Method of treating Xanthoma.—Morrow (*Jour. Cutan. and Genito-Urinary Diseases*, January, 1893) gives the notes of a very interesting case of xanthoma tuberculatum, and reports a gratifying success with the following treatment. A circumscribed area over the inner side of the left heel, where the growths seemed to be most superficial, was first covered with a strip of twenty-per-cent. salicylic acid plaster, which was kept in position for several days. After the outer layer of the skin was thoroughly softened, the plaster was removed, and there came away with it both disintegrated epidermis and a number of xanthoma tubercles.

Later on, a twenty-five-per-cent. plaster was employed, which was, in some instances, fortified with a little of the salicylic acid sprinkled over the surface. The growths appeared to occupy different strata of the skin. For example, after a single application of the plaster, worn for from three to five days, the more superficially seated tubercles would come away readily; others, at a greater depth, would be softened, and could then be dug out; while still deeper ones remained intact.

After the removal of the plaster and the exposed and loosened nodules, the patient was directed to soak the feet in hot water, and then apply lint spread with diachylon salve for a couple of days. This usually sufficed to subdue any irritation arising from the treatment, so that the plaster could be reapplied when necessary.

Up to date of the publication the progress towards recovery had been eminently satisfactory. Aside from the novelty of the treatment, the case was interesting from the excessive hardness of the lesions, the presence of pain in them, and the fact that there was a most extraordinary development of tufted capillaries over their surfaces.

Treatment of Alopecia Areata.—Brocq (*Jour. Cutan. and Genito-Urinary Dis.*, January, 1893), in his interesting letter from Paris, mentions

several of the new methods of treatment employed by French physicians for alopecia areata.

Dr. Morel-Lavallée, after washing the affected surfaces with an antiseptic lotion, resorts to a mild, superficial scarification. He then applies an ointment (the kind not stated) for several hours. The hairs in the neighborhood are not epilated. The operation is repeated about every eighth day. The method is said to be very successful.

Dr. Busquet makes daily applications of essence of Chinese cinnamon; the hairs being cut as short as possible, and all lotions avoided. After each application the brush, which is made of cotton wool, is destroyed. The mean duration of treatment is from three to five weeks.

Dr. Raymond's method is as follows: 1. The surrounding region is shaved for a space of one or two centimetres. 2. Wash the head twice a week with a carbolated soap. 3. Every morning the whole head is rubbed with this lotion: bichloride of mercury, fifty centigrammes; tincture of cantharides, twenty-five grammes; balsam of Floraranti (?), fifty grammes; cologne water, one hundred and fifty grammes. Moreover, the affected areas are to be brushed for a minute or two with a soft brush wet with the same preparation. 4. The same evening the spots are to be rubbed with the following: salicylic acid, two grammes; beta-naphthol, ten grammes; acetic acid (crystallizable), fifteen grammes; castor oil, one hundred grammes. If contagion is feared, the plaques should be covered in the mean time with Vidal's red plaster. These various procedures should not produce inflammatory reaction, but only some degree of redness.

Under this method the hairs are said to begin growing in less than a month.

Brocq thinks there are two distinct kinds of "pelade,"—the ordinary circumscribed variety, that gets well under any form of treatment, and those forms having numerous foci, which resist all manner of treatment whatsoever.

Lupus Erythematosus.—Malcolm Morris (*British Jour. Derm.*, November, 1892), in a paper read before the Second International Dermatological Congress, presented the following conclusions as to the present knowledge on the subject of lupus erythematosus. This affection can no longer be regarded as a neoplastic process, but, on the contrary, it is of inflammatory nature, beginning in the blood-vessels, and without necessary connection with the sweat or sebaceous glands; as to the cause of the inflammation, nothing is certainly known. The author regards the tubercular theory of the disease as without any foundation, and the causative relation of other micro-organisms as equally unproven. For the present, therefore, he regards lupus erythematosus as a chronic inflammation of the skin, local in its origin, and generally local in its course, unconnected, apparently, with any underlying constitutional state.

HYGIENE AND BACTERIOLOGY.

IN CHARGE OF A. C. ABBOTT, M.D.,
First Assistant in the Laboratory of Hygiene, University of Pennsylvania.

Report on the Bacteriological Examination of Cases of Cholera and Pseudo-Cholera in Berlin in the Present Year. (Bericht über die Bacteriologischen Untersuchungen bei den diesjährigen Cholera und Choleraverdächtigen Erkrankungen in Berlin. *Berliner Klinische Wochenschrift*, 1892, No. 48.) By Canon, Lazarus, and Pielicke.

The authors examined eighty cases bacteriologically. In the evacuations of thirty of these, which proved to be true Asiatic cholera, comma bacilli were found. The authors call attention to a point that has been mentioned by others,—viz., that there exist in the intestinal tract comma-shaped bacilli which are so like the spirillum of Asiatic cholera as to give rise to an erroneous impression if the evacuations are examined only microscopically. They do not, however, when subjected to the culture tests, grow upon gelatin, and by this means are easily differentiated from the cholera bacillus. The number of comma bacilli found in the intestinal contents gives no indication of the severity of the attack. They have employed the method of Schottelius, and conclude that it is of but little practical value, claiming that they have seen the pellicle appear on the surface of the fluid when the method was employed in cholera nostras, and have noticed its absence when material from true cholera was employed. Similarly they have found the "cholera red" (indol) reaction in cultures from cholera nostras, and have failed to obtain it in some cases of true cholera. As a result of a systematic study of the evacuations of single cases of cholera, they state that the comma bacillus appeared in the evacuations rarely earlier than the fifth day of the disease, and seldom later than the eighth day. In one case their presence was demonstrated in formed fæces. Efforts at disinfecting the intestinal tract during the course of the disease were made by administering calomel, creolin, salol, and other substances by the mouth, but no influence either upon the number or vitality of the bacilli in the intestines could be noticed.

On the other hand, in one case in which there was an evacuation five hours after a high enema of tannin, there was a conspicuous diminution in the number of the organisms present.

The Relation of the Cholera Bacillus to Fresh Fruit and certain Food-stuffs. (Publication of the Imperial Health Bureau, Berlin, 1892, No. 42.)

Experiments performed at the Imperial Health Bureau in Berlin, with the object of determining the length of time that the cholera spirillum retains its vitality in uncooked foods and drinks, resulted as follows: when deposited upon the surface of fruits and hung in the direct sunlight the

bacilli were dead in from one to five hours; when dried upon the surface of fruits, in one day; but when kept moist upon the surface of fruits they retained their vitality from one to seven days.

In the pulp of fruits and vegetables the results were very variable: in some instances they were dead in twenty-four hours, while in others they were alive after seven days. They retained their vitality longest in pears and cucumbers. On the whole, the acidity of the fruit seemed to favor the death of the organism. No essential difference could be noticed between infected fruits and vegetables kept at the ordinary temperature of the room, or at body temperature.

In beverages, the bacilli died most quickly in wine; in white wine in five minutes, in red wine in fifteen to twenty minutes; in certain beers and in coffee in two to three hours; in unsterilized milk they were dead in twenty-four hours; in milk that had been boiled for one hour they retained their vitality for ten days. In cold tea, the strength of the tea seemed to play an important part, for in four-per-cent. tea the bacilli were dead in one hour, in three-per-cent. tea after one day, in two-per-cent. tea they were alive after four days, and one-per-cent. tea they retained their vitality for eight days.

On dried tobacco leaves the bacilli were dead in from one to one and one-half hours, while on moistened leaves they retained their vitality for four hours. On the flesh of fresh river and sea fish they were dead after two days, while on smoked or pickled herrings they remained alive but one day.

The Presence of Loeffler's Bacillus in the Pharynx of Individuals recovering from Diphtheritic Angina. (Ueber das Vorhandensein des Loeffler'schen Bacillus im Schlunde bei Individuen welche eine diphtheritische Angina durchgemacht haben. Laboratory of Medical Bacteriology, Copenhagen. *Centralblatt für Bacteriologie und Parasitenkunde*, Bd. xii. No. 17.) By Tobiesen.

The author reports the results of his examinations of the pharynx of individuals who have passed through attacks of true diphtheria. The patients were retained in a convalescent ward of the Blegdams Hospital in Copenhagen for from five to six days after the disappearance of the membrane from the pharynx.

He examined forty-six cases that were discharged as cured, and in which the diagnosis of true diphtheria had been made by bacteriological means. He reports the interesting results, that in twenty-four of these cured and discharged cases it was still possible for him to find the bacillus diphtheriæ in the tissues of the throat. This was so not only with those individuals who had passed through severe attacks, but also with those who had been affected but lightly. With the cultures from nineteen of these cases guinea-pigs were inoculated: sixteen died in from twenty-four to fifty hours, with the pathological lesions characteristic of this disease in these animals; two

showed only a swelling with following necrosis at the seat of inoculation, while the remaining animal exhibited typical diphtheritic paralysis in addition to local necrosis. As a result of these investigations, it is plain that a diphtheritic patient, who has passed through the disease, and has been discharged as cured, must be looked upon as dangerous to those with whom he may come in contact for a number of days after the disappearance of the membrane. Indeed, it is probable that in twenty-one cured and discharged cases there was further communication of the disease to individuals with whom they came in contact.

PATHOLOGY.

IN CHARGE OF ALLEN J. SMITH, A.M., M.D.,

Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas.

Retrograde Changes in Trichinæ and their Capsules. (Ueber regressive Veränderungen der Trichinen und ihrer Kapseln. *Virchow's Archiv*, Bd. cxxx., H. 2.)—Dr. Robert Langerhans, of Berlin, reports a case of trichinosis in the person of a woman who died in the wards of the Charité Hospital at the age of fifty-one years. The parasites were found in enormous numbers, particularly in the diaphragm, in the intercostal muscles, in the muscles of the neck, of the eyes, the tongue, and in both pectoralis major and deltoid muscles. As nearly as could be ascertained the only time in the life of the patient when the invasion of these parasites could have taken place was in her twentieth year, during the manifestations of a supposed articular rheumatism; from which it may be assumed that they had been present in her person for thirty-one years. A small proportion of the organisms were yet living, the duration of their supposed parasitic existence being the longest on record; but by far the greater number were dead and more or less altered. Inasmuch as the changes of these parasites after their death have received little attention, and references to such changes are infrequent and indefinite, the author has classified the various conditions in which he found these parasitic bodies in this case with such an apparently prolonged duration. In many the capsules were unchanged, the trichinæ dead and calcified, some with their forms preserved, others broken into larger or smaller fragments; about many of the capsules was a variable amount of fat-tissue, especially about the poles, and in some instances there was to be seen in addition a round cell deposit, either about the poles or all around the periphery of the capsules. In some cases the unchanged capsules presented an absolutely empty interior, while others, unchanged in size and appearance, were filled with connective tissue, here and there being changed into adipose tissue. There were to be seen, too, degenerated capsules containing fragments of calcified trichinæ, or entirely empty, or filled with fibrous or adipose tissue. Some of the appearances were to be

regarded simply as atrophied, shrunken, empty, or scelerosed capsules; and here and there there were spots in the tissue which seemed to be the former position of parasites and their capsules, but which no longer showed anything save small patches of connective tissue.

From these descriptions it is to be supposed that these parasites, together with their envelopes, are subject to degenerative conditions, and that they eventually and naturally reach a stage of elimination from the body of their host. It is probable that this process of removal is accomplished sometimes, in part at least, through the agency of a connective-tissue formation; but it is likely that it may also take place without it. The author states that he cannot confirm Müller's belief that the removal of the parasites occurs by a fatty degeneration, or Leukart's that they are resorbed without having first been calcified. It is probably correct that the parasites undergo this calcification before the capsules do, the latter undergoing this change soon after the death of the parasite, sometimes before the resorption of the trichina is complete, sometimes after its complete removal. The recovery from the invasion of the parasites is not, therefore, complete with the calcification of the trichinæ, but with the total elimination of both the animals and their envelopes.

Discovery of a Protozoon in a Supposed Case of Mycosis Fungoides. (Ueber einen Protozoon-Befund bei Mycosis Fungoides (?). *Centralbl. f. Bakteriol. u. Parasitenk.*, Bd. xii., No. 24.)—Dr. Robert Wernicke, of Buenos Ayres, announces that in sections of the nodules in a case supposed to be mycosis fungoides, he has discovered bodies apparently of a coccidian nature. The patient is a native of Buenos Ayres, a soldier, who has lived in various parts of Argentina, born of healthy parents, had never seen or been near any one with a similar affection to his knowledge, and gave no history of syphilis. The tumors first appeared about four years ago, as a few scattered, slightly raised patches, and now are found in considerable numbers, often in groups of irregular shape, confluent, slightly itching, and varying in size from the head of a pin to that of a pea. On microscopic examination these tumors are found to be situated in the corium, not extending to the subcutaneous tissues, and are seen to be made up of ordinary granulomatous tissue. In the centre of the nodule, which may sometimes be softened, one or more giant cells are to be seen, containing perhaps as many as thirty nuclei; and in the interior of these are found the supposed coccidia in the form of round bodies of a light-yellow color, consisting of an outer hyaline layer and an inner granular, unstaining mass. As many as ten may sometimes be counted in a single giant cell, each measuring from three to thirty micromillimetres in diameter. The nuclei of the giant cells seem in some way to be kept at a distance from these bodies, which thus are apparently in a clear space in the enclosing cell-mass. No nucleus can be made out, the contents of the cyst-like body being a fine granular protoplasm, in some cases apparently segmenting and giving rise

to a number of daughter-cysts, which become surrounded by a covering such as the parent had. The parent wall of this sporocyst disappearing, the young coccidia are seen lying together in a mass within the giant cell. As to the generalization of these young bodies, the author can make no statement, but conjectures that after slight individual wandering they are borne passively through the circulations. This idea is confirmed by the discovery of large numbers of these same bodies in giant cells found in a bunch of enlarged inguinal glands.

CLIMATOLOGY.

IN CHARGE OF GUY HINSDALE, M.D.,
Lecturer on Climatology in the University of Pennsylvania, Philadelphia.

Geographical Distribution of Disease in Massachusetts. (*Report of the Massachusetts State Board of Health*, 1892.)—Dr. Samuel W. Abbott has published a summary of the deaths occurring in Massachusetts for twenty years, 1871–90. The diseases particularly studied are measles, scarlet fever, diphtheria and croup (considered together), small-pox, typhoid fever, cholera infantum, phthisis, and pneumonia. The deaths from these diseases have been carefully analyzed, and eight maps have been published, showing, by shades of color, the prevalence of each disease in every township of the State. This has been possible through the admirable system of registration of vital statistics enforced throughout Massachusetts. Unusual care has been taken to make this a trustworthy report. The following are some of the conclusions drawn:

Measles.—Great variability in the death-rate; in 1872 it was thirty times as great as in 1879. Density of population favors its spread.

Scarlet Fever.—The extreme of mortality was in 1875, and was twelve-fold greater than in 1889. Density of population favors its spread; but neither in this case nor in measles does geographical position have marked influence.

Diphtheria and Croup.—Rate in 1876, 19.9 per ten thousand, and in 1873, 4.7. Disease most prevalent in the northwestern corner of the State, at a high elevation above the sea.

Small-pox.—The conditions which appear to have influenced the mortality are: density of population, relation to large centres of population, the use of rags in the manufacture of paper, and the thoroughness with which vaccination and revaccination are performed.

Typhoid Fever.—A general decrease in mortality. Density does not seem to have influenced the rate. The greatest prevalence was in the river valleys of the Connecticut and Chicopee and Lower Merrimac. The entire suburban metropolitan district adjoining Boston and the greater part of Essex County north of it were unusually free.

Cholera Infantum.—Density of population has a marked effect, and the quality of milk-supply, as determined by State inspection, has a definite relation to mortality. The employment of married women in factories also coexists with high mortality from cholera infantum.

Consumption.—Rate quite uniform, but showing a gradual decrease. The average of the first decade was 32.7 per ten thousand, and of the second, 29.2. Berkshire and Franklin Counties had the lowest death-rate; Nantucket and Boston the highest. The disease is twenty-seven per cent. less prevalent in the sparse districts than in the dense, and decreases from the sea-coast towards Berkshire County in the west, conforming closely with the rise in altitude in inverse ratio.

Pneumonia.—There was an increase from 14.6 per ten thousand in the first decade to 16.6 in the second. The inland counties present a high mortality, and the sea-coast counties a low one. Elevation above the sea-level appears to have coincided with high mortality from this cause. With reference to these two causes, distance from the sea-coast and elevation, phthisis and pneumonia seem to be complementary.

Mineral Springs and Health Resorts of California. (By Winslow Anderson, M.D., M.R.C.S. Eng., editor *Pacific Medical Journal.* San Francisco, 1892. 8vo, pp. 384.)

The basis of this interesting volume is an essay to which was awarded the prize of the Medical Society of California in 1889. In its present form the text is accompanied by seventy-two illustrations, which attract the reader and afford a general conception of the surroundings of the various resorts. The work contains information as to over two hundred mineral springs in California, one hundred of which are analyzed, besides two hundred analyses of various springs throughout the world. Napa Soda Springs, about fifty miles north of San Francisco on the southwestern slope of the Coast Range, are among the best known. The charming situation, a thousand feet above the beautiful valley of Napa County, and the luxuriant surroundings attract many visitors. The waters are alkalo-chalybeate, and are of value in the treatment of nephritis, cystitis, and dyspepsia. The Coronado Springs, near San Diego, yield on analysis the very moderate amount of twenty-six grains of solids per gallon. Their effect is gently diuretic. The accommodations for visitors are excellent. The California Geysers, about one hundred miles north of San Francisco, are the outlets of a volcanic district. The temperatures of the springs range from 70° to 212° F. The waters are sulphurous, acidulated, saline, and ferruginous. They are valuable for external and internal use, and are available to the public.

Dr. Anderson has introduced a great deal of valuable information as to the use of mineral waters in general, and particularly with regard to bathing. He wisely says, "Mineral springs are not 'cure-alls.' As a rule too much is claimed for them. The many marvellous cures cited, and the many improbable and ridiculous statements seen on printed circulars, do more

harm than good. Sensible people are not going to believe that a 'magnetic' mineral water is going to cure a bad case of consumption, or that any 'mineral water' cures heart-disease, etc." The author lays great stress on the value of repose in connection with the moderate use of waters. In his chapter on the skin, his statement that "an average-sized individual has from two hundred to two hundred and forty square inches of cutaneous surface," is just twelve times too little; whereas his reference to the seven million pores in the human body is, according to Sappey, more than twice too much.

REVIEW OF ITALIAN, SPANISH, AND PORTUGUESE MEDICINE.

IN CHARGE OF A. M. FERNANDEZ DE YBARRA, M.D.,

Corresponding Member of the Medico-Chirurgical Academy of Madrid, Spain, the Argentine Medical Circle of Buenos Ayres, South America, and the Society for Clinical Studies, of Havana, Cuba.

Oöphoro-Salpingectomy in a Case of Tuberculosis of the Left Ovary and Fallopian Tube. (*A Medicina Contemporanea*, Lisbon, December 25, 1892.) By Dr. Sabino Coelho.

A strong woman, twenty-six years of age, after a miscarriage brought on by a traumatism in the left iliac region, complained of pain there, increased on pressure, which also caused hyperthermia and vomiting. All this obliged her to enter a hospital. A tumor was found deep in the left groin, and showing fluctuation; an incision was made and the pus evacuated. Several months after the operation, a fistulous opening having remained, a second incision was made in the same place; but as this last cutting was no more successful than the first, it was resolved to remove the left uterine annexes, found by an exploratory incision to be already in direct communication with the suppurating track, whose superior border reached the left kidney. Through an incision made at the median line the operator came up to a tumor formed by the uterine annexes, which were adherent to the left obturator membrane. The uterus was retroflexed. Denudation was difficult on account of the firmness and vascularity of the adhesions. The fistulous track completely healed after a time, and the patient was cured.

The amputated ovary showed multiple abscesses, and the Fallopian tube was hypertrophied. In both a large number of tubercles were found.

The Influence of Ptomaines on the Toxicological Investigation of Vegetable Alkaloids. (*A Medicina Contemporanea*, Lisbon, December 25, 1892.) By A. J. Ferreira da Silva.

This article is an able refutation of the professor of chemistry of the Polytechnic Academy of Oporto to the criticism of Professor Henry Beckurts, and relates to the toxicological investigation made and published by the

former, named as expert by the prosecution in the celebrated Portuguese medico-legal case known by the name of Urbino de Freitas.

The train of reasoning of the author, although acknowledging the difficulty of distinguishing the vegetable alkaloids from ptomaines in old cases of poisoning, is to prove his verdict in the case unbiassed and scientific. He adds that experts have nothing whatever to do with the culpability or innocence of the accused, which is a matter that concerns the tribunals, and that their duty is only to say honestly and candidly what they find in the analysis.

FORENSIC MEDICINE.

IN CHARGE OF LORENZO D. BULETTE,
Of the Philadelphia Bar.

LEGAL LIABILITY OF A PHYSICIAN UPON WHOSE CERTIFICATE A SANE PATIENT IS COMMITTED TO AN INSANE ASYLUM.[1]

(Continued from page 205.)

For this purpose Hall *vs.* Semple,[2] apparently the earliest reported case of an action for damages against a physician for carelessness in examining into the sanity of his patient, is particularly valuable, not only for the number and variety of the questions passed upon as bearing upon negligence and incidental phases of the physician's liability under the lunacy laws, but also for its impressive lesson as to the necessity he is under to exercise circumspection and preserve his mind free and uninfluenced in its judgments by the prejudices and bitterness and conflict of opinion that sometimes manifest themselves in cases of this kind. In these reasons, therefore, a rather full presentation of the evidence in that case and the comments of the Court thereon, in instructing the jury in the law applicable thereto, finds ample justification.

The case arose under the English lunacy act,[3] and the complaint alleged both the grounds of liability mentioned above, although the first was not seriously insisted upon. The defendant urged, by way of defence, that his conduct was in pursuance and under the authority of the act.

---

[1] The first instalment of this article, which the requirements of space made it necessary to divide up, appeared in the March number of this Magazine.—EDITOR.

[2] 3 F. and F., 337 (1862).

[3] 8 and 9 Vict., c. 100, secs. 45, 46; 16 and 17 Vict., c. 95, sec. 105.

Since the lunacy statutes of the different States are drawn on the same theory, and contain essentially the same provisions for the care, custody, and treatment of the insane, as the English act, it is proper in this connection, for a clearer understanding of the present case, to quote portions of the three sections of that act which gave rise to the present contention. It is provided in section 45 "that no person, whether being or represented to be a lunatic, . . . shall be received into or detained in any licensed house without an order, under the hand of some person, according to the form and stating the particulars required in the act, nor without the medical certificates . . . of two physicians or surgeons, . . . who shall not be in partnership, and each of whom shall, separately and apart from the other, have personally examined the person to whom it relates, not more than seven clear days previously to the reception of such person.

"Section 46. That every physician or surgeon . . . signing such certificate shall specify any fact or facts (whether arising from his own observation or from the information of any other person) upon which he has formed his opinion that the person to whom such certificate relates is a lunatic, or an insane person, or a person of unsound mind.

"Section 105. That if any action is brought against any person for anything done in pursuance of the act . . . the defendant may give this act and the special matter in evidence at any trial; and that the same was done in pursuance and by the authority of this act."

With these portions of the lunacy act pertinent, we next proceed to a history of the case.

The plaintiff was a respectable tradesman, fifty-six years of age, who had been married to his present wife and had carried on business in the same neighborhood about thirty years, during the whole of which time Dr. F. had been medical attendant to himself and family. He had several children, of whom the youngest at the time of the matter in question was about ten years old; another daughter was about twenty-one, and two daughters were grown up and married,—the one to a person named W., the other to one H.

The plaintiff's marriage had proved very unhappy, and in the first month the most painful dissensions had taken place between him and his wife, which continued down to the time in question. There were frequent disturbances and several separations. In 1851 Dr. F. attended the wife for some violence, but how caused he could not recollect. In 1856 the wife consulted G., a surgeon, and also a physician, L., and got from them certificates that her husband was of unsound mind. It did not appear upon what examination, if any, these certificates had been given. G., who was examined on this trial, did not state, and L. was not called as a witness, nor were the certificates produced; they were not acted on.

The dissensions and disturbances between the plaintiff and his wife became worse and worse, attracting a great deal of attention in the neighborhood, often causing the shop to be closed and crowds to collect around it.

For six or seven years past they had not cohabited as husband and wife, though living in the same house.

There was contradictory evidence as to actual violence by the plaintiff towards his wife; but there was no doubt that they had a bitter mutual aversion, and that he used bad language towards her, and sometimes using such words as might, if seriously used, convey an imputation of adultery; but it appeared from evidence that these epithets were rather used as words of abuse than as conveying any such charge. There were repeated applications to the police court both by husband and wife, and on one occasion she was bound over to keep the peace towards him.

It was proved, and indeed admitted by the wife, that during this period she had repeatedly pawned goods out of the shop and also incurred debts. She accounted for this by stating that she and her children were in want of necessaries, but of this there was no evidence beyond her assertion, and it was contradicted by one of the married daughters and the neighbors and a son-in-law, and it came out that during this time she deposited sums in a savings-bank.

During this period also it appeared that the plaintiff was under the impression that the wife was often resorting to physicians with the view of having him confined as a lunatic, and it was a fact that she had repeatedly resorted to G. on occasions of alleged violence against her. On one of these occasions he followed her to G.'s and said to G., "Oh, you are one of her fellows, are you?" (This was the expression chiefly relied on as showing a delusion on his part as to her adultery with G., but it plainly alluded to her frequent resort to medical men with a view to her husband's incarceration as a lunatic.)

On one occasion, when G. was called in by the wife to see her husband, it would seem that he had certainly been in a violent transport of passion and pulled down part of a mantel-piece and broken a looking-glass. This was sworn to and not denied (although he denied all violence to his wife), and G. was told of it at the time by the wife, and saw the results of the violence, though he did not actually witness it.

In the course of these events G. had evidently imbibed a strong impression in favor of the wife, and had taken her part warmly, but the defendant, Dr. S., in the mean time, was an utter stranger to them, and knew nothing either of the plaintiff, of his wife, or of G.

On June 13, 1862, G. was again called in by the wife to see her husband, the plaintiff, after a quarrel between them, and had a short interview with him, when the plaintiff was excited and treated him rudely, and told him he was a fool to mind what his wife said, adding some expression as to fellows always running after her, of whom (as G. stated) he said that G. himself was one; an expression which, as to the latter part of it, the plaintiff denied, and which G. supposed to mean an imputation of adultery, but which probably referred to the wife's habit of bringing in medical men from time to time to look at him as if he were insane.

At this time there had been still no communication either between the plaintiff's wife and the defendant or between the defendant and G. But on July 28, 1862, another quarrel having occurred between the plaintiff and his wife, she resorted to the defendant, Dr. S., who resided in the neighborhood, and made various statements to him concerning her husband, as that he slept with a drawn sword by his bedside and threatened to stab her, and, further, that he labored under the delusion that his wife was ruining him, and was improperly associating with other men. She begged him to see her husband at once, and he did so that same day. He saw the plaintiff at his own shop, found him excited and rude, and left in about ten minutes. At that brief interview the plaintiff said something about his wife running into debt and pawning goods, and also said something as to fellows running after her or she after fellows, which the plaintiff said pointed to tradesmen with whom she contracted debts, and which the defendant supposed to mean an imputation of improper association with other men, but which probably referred to the wife's previous resort to G. and other medical men for the purpose of having him confined as a lunatic.

The plaintiff told the defendant that his medical attendant was Dr. F.

On the following day, July 29, the defendant, at the wife's request, saw G. and heard his account, which confirmed hers, but had been chiefly derived from her own statements, except so far as the indications of violence had been observed by himself. And on this day the defendant and G., without any further examination by either of them of the plaintiff, and without either of them resorting to Dr. F., or to any member of the family, or to any intimate personal friend, signed the certificates that the plaintiff was of unsound mind.

The wife took these certificates to an asylum, the manager of which sent men, at her instance, who, under the authority of the certificates, the following night, seized the plaintiff and forcibly carried him to the asylum.

Dr. S., the defendant, had no knowledge of this until after it had occurred, but he must have known, of course, that the wife intended to make use of the certificates.

The wife's order for admission and the doctors' certificates were on printed forms on one and the same piece of paper. The defendant signed his certificate first, and left the paper with G., who signed afterwards and gave the paper to the wife, who then filled in her own order for admission into the asylum. G.'s certificate, it will be observed, being signed on July 29, and he not having seen the plaintiff since his interview on the 13th, was founded on an examination more than seven clear days previous, and so was invalid under the statute. But it did not distinctly appear that the defendant knew that, since July 13, G. had not seen the plaintiff, though it would rather appear that he did, because it was intended that G. should see the plaintiff again on the same day (the 29th), and he went to the shop for the purpose, but could not see him, and then went back and, being pressed

by the wife, signed his certificate,—the defendant having already, as above mentioned, signed his.

Dr. S., the defendant, based his opinion that the plaintiff was insane upon the following facts, stated in his certificate to have been observed by himself: "He had a wild and staring look, with restless eyes, and nervous, agitated manner. He represented to me that his wife was ruining himself and business, and he intimated that she was improperly associating with other men; he is evidently laboring under delusions, and he acts upon these delusions. Other facts indicating insanity communicated to me by others were: repeated acts of violence; he constantly threatens his wife, and often assaults her; he sleeps with a drawn sword by his bedside, and declares he will murder any one who approaches him, and he has often threatened to stab his wife."

On the day after the plaintiff was taken to the asylum the defendant, who had not seen nor tried to see the sword spoken of by the wife, went to the police station nearest to the plaintiff's house and pressed the police to get hold of it, but they declined to interfere. Some expressions, said to have been used by the defendant on this occasion, were relied on as showing a consciousness of rashness in the statements in his certificate. In point of fact, the sword was only an old theatrical or court-dress sword which had belonged to a brother of the plaintiff, and did hang up in his bedroom. But, as already mentioned, the wife did not sleep with him nor in his bedroom, nor had she done so for years, and she herself stated that she scarcely ever had been in his bedroom during that period.

A day or two after the plaintiff was taken to the asylum the visitors in lunacy saw him, the medical attendant, S., having previously seen him, as also did the proprietor of the asylum. The visitors, finding that G.'s certificate was invalid, as already mentioned, directed the plaintiff's discharge on that ground, and gave no opinion as to his sanity.

The defendant, hearing that the plaintiff was likely to be discharged, wrote to the proprietor of the asylum this letter:

"Sir,—I hear with surprise that it is in contemplation to send out of your asylum a man named H., who was taken there the other day. As the man is, in my opinion, a dangerous lunatic, and is now confined under legal authority,—one of the certificates being signed by myself,—I beg that he may not be discharged until his wife, who is in danger of her life, has an opportunity of laying her case before the commissioners in lunacy, to whom she will appeal immediately; and I am willing to appear before the commissioners to justify my own conduct in the matter."

The plaintiff, soon after his release,—about the middle of August,—brought the present action, but after that—in September—the defendant and Dr. W. had another interview with him, in the presence of a married daughter, Mrs. H., and of two neighbors, as to which evidence was given

at the trial; and after this the defendant wrote and gave the wife a letter, stating, "I hereby express my opinion that Mrs. H. (the wife of plaintiff) is an injured and ill-used woman; that there is no truth whatever in the infamous charges brought against her, and that she fully deserves the sympathy of her friends."

These letters were relied on by the plaintiff as evidence of personal interference on the part of the defendant beyond his duty, and tending to prove that he had not acted *bona fide*.

Such is the history of the case, as to which an immense mass of evidence was given in the course of several different days.

The plaintiff was called and examined and was cross-examined as to violence to his wife and the alleged delusions, as to which he asserted the fact of pawning and running into debt, and denied ever having made the imputation of adultery. Mrs. H., his married daughter, was also called, and gave her account of it, which was, in effect, that there had been faults on both sides, but that her father, whom she described not only as quite sane, but as remarkably sensible, was least to blame, and she denied ever having seen or known of any acts of violence to her mother. Her evidence was confirmed by W., a son-in-law of the plaintiff, by the two neighbors who had been present at the defendant's last interview with him in the presence of Dr. W., and by a number of neighbors and old friends (one of whom saw him on the night of his seizure), and by the police who saw him when he was being taken to the asylum.

The plaintiff's relatives and friends knew nothing of the alleged delusions, as to which, indeed, two turned out to be no delusions at all, but strong impressions of actual facts,—viz., the pawning and running into debt; and the third, as to his wife's adultery, was denied by himself, and none of the witnesses, except the wife and G., appeared to have any notion of its existence. Assuming it to exist, the evidence of the married daughter was sufficient to show that it would not be grounded on fact, but there was no other evidence that it would be irrational or insane.

One of the medical witnesses for the plaintiff denied that *mere* delusions as to matters of fact which *might* occur (as a wife's unchastity) were necessarily symptoms of insanity, unless irrational; but he did not deny, and Dr. F., who was called for the plaintiff, and declared that, so far as he could judge, he should consider him of sound mind, admitted that such delusions, if they could be shown to be real,—that is, not mere effusions of rage or jealousy, but continuous and persistent, and also irrational,—might be symptoms of insanity. Such seemed to be the effect of the plaintiff's medical evidence on the *theory* of the subject, and it did not differ materially from the defendant's medical evidence on the same subject, but Dr. F. had never examined the plaintiff with a view to this particular question, and the opinions upon it in this particular case were purely hypothetical, inasmuch as there was not sufficient evidence that the delusion, sane or insane, ever really existed in the plaintiff's mind.

For the defence the defendant and G. were called, and spoke to such facts as they had stated, and such words as they had heard uttered by the plaintiff, and such statements as the wife had made to them, and she was called to confirm their evidence, especially on the latter part. But no other relative of the plaintiff was called for the defence, nor any intimate friend of his; and the neighbors alluded to in the certificates, one or two of whom were called, appeared to be persons to whom the medical men had been referred by the wife, and were not intimate with the plaintiff. And it appeared that (except as above stated) the physicians had acted chiefly on the wife's statements to them, and that the defendant had chiefly acted on her statements and those of G.

Dr. W., being called for the defendant, admitted, on cross-examination, that he should not have signed the certificate on the facts as they appeared to have been presented to the defendant when he signed it.

G. testified that the plaintiff seemed to labor under a "monomaniacal aversion" to his wife without any sufficient cause. But G. had, as the learned judge stated, evidently espoused the wife's cause very strongly, having taken his idea of the case chiefly from her, and having seen the plaintiff only once or twice on occasions when she had called him in, and when the plaintiff was under great excitement, and there had been quarrels between them. And there was no other evidence that the aversion was irrational or "monomaniacal" than that the wife and one or two of her partisans stated that she was not to blame, whereas the daughter stated that she was.

It was insisted by defendant's counsel, in the course of the trial, that if the forms of the act had been pursued,—at all events, if the defendant had acted *bona fide* thereunder,—it was sufficient. But it was the opinion of the Court that the question would not turn on malice or *mala fides*, but on negligence, and the word "maliciously" was replaced by the word "negligently" in the complaint; and also that, as it did not appear either that the defendant had any concern in the actual taking of the plaintiff, or with G.'s signing of the certificate, the various other grounds of complaint failed, and it came, therefore, to the question whether the defendant had used reasonable care in finding out the truth before he gave his own certificate.

Mr. Justice Crampton, at the close of the evidence, charged the jury as follows: "The learned counsel were right in regarding the case as one of very considerable importance, not only with reference to the personal liberty of the subject,—when a party is put under restraint in a case of this kind,—but also with reference to the medical profession. On the one hand, it is of great importance that they should very carefully sign certificates of this kind, and that personal liberty should not be interfered with improperly by any abuse of the power which the law has intrusted to these parties; and, on the other hand, it is very important to the medical profession that if a person acts really *bona fide* under authority of the act by which these duties are assigned to him, he should not be made responsible for

a mere error in judgment or a mistake in facts. It is also very important to the interests of the public that persons who are really lunatics should be immediately taken care of. Very often it is a difficult and delicate matter to be decided upon, and we all know what lamentable mischief sometimes arises through lunatics not being put under restraint at the proper time. Again and again we see in the criminal courts what lamentable consequences ensue from even a few hours' delay. The case, therefore, in all its bearings is one of very great public importance, and I am sure, therefore, that you will, with great care, apply to the facts the law as I shall lay it down to you.

"If the plaintiff's case was well founded, no doubt it would be a sad thing if there were no redress. And, on the other hand, it would be lamentable if, where no blame really attached to the medical man, he was to be ruined merely for having acted *bona fide* in the performance of the duty which the statute has imposed upon him. The statutes passed to regulate the confinement and care of lunatics have not put the powers of the act in the hands of those medical practitioners only who have particularly devoted themselves to matters of this kind; and it is to be remembered that very often it would be impracticable to call in such practitioners. The physician must be called in at once, and is called upon to act at once; and the statutes seem to make very wise provisions for such cases, which it is very important to understand the effect of with reference to their bearing on the case before us. The statutes require that before any person shall be sent to an asylum two medical men shall each separately sign and give certificates after due examination, and shall state in the certificates the facts upon which they have formed their opinion, distinguishing the facts they have stated of their own knowledge from those which they have heard from others. These certificates are to be the basis of the power to send a person to an asylum. The keeper of the asylum is not to act on these alone. The person who applies for them is obliged to come forward and sign an order to the keeper of the asylum to receive the party thus certified to be a lunatic, and also subscribe a printed form with answers to certain questions. The keeper of the asylum is subject to very severe penalties if he receives a party without the proper order and certificates. So that there is the safeguard of having the certificates of the medical men, and also the further safeguard of knowing who the party is who is putting the patient under restraint. Then, when these documents go to the keeper of the lunatic asylum, he is to send them to the commissioners in lunacy, and they, having them before them, come in their regular visitations and see the party who is confined. These, you see, are the wise provisions made for the purpose of precaution, requiring the medical men to discharge a certain duty in making an examination of the party, and also requiring the party who is sending the patient to the asylum to sign a certain document containing the answers to certain questions; and all these documents are sent to the commissioners."

(To be continued.)

BOOK REVIEWS.

A Text-Book of Practical Therapeutics, with especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to St. Agnes's Hospital and to the Jefferson Medical College Hospital; Consulting Physician to the Franklin Reformatory Home; Laureate of the Royal Academy of Medicine in Belgium, of the Medical Society of London, etc.; President of the Section of Therapeutics in the Pan-American Medical Congress. Third Edition. Enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co., 1892.

We have before us the third edition of this most excellent book. We have carefully re-examined it, and find that the work has been considerably enlarged and improved. The new additions, though few in number, are carefully selected by the author. There are brief articles, but to the point, on Dermatol, Diuretin, Guaiacol, Europhen, Pental, Phenocoll, Piperazine, Salophen, Terpine, Terpinol, Thiol, and the salts of Strontium.

A list of drugs arranged according to their physiological actions, and another list of definitions of the terms employed to designate the classes of drugs, are certainly two very important additions.

We notice an error under Phenocoll. The author states, besides other things, that the action of this drug upon the animal organism has been studied in America by *Wood and Cerna.* This is a mistake, for the only study in America, besides that of Ott, of which we are acquainted, is the one made by Drs. David Cerna and William S. Carter, and published in the September number, 1892, of *Notes on New Remedies.*

On the whole, Hare's Therapeutics is up to the times in every respect, and continues, most deservedly, to receive the favor of the medical fraternity.

Medical Jurisprudence and Toxicology. By Henry C. Chapman, M.D., Professor of Institutes of Medicine and Medical Jurisprudence in Jefferson Medical College, Philadelphia. With thirty-six illustrations. Published by W. B. Saunders, Philadelphia. Price, $1.25 net.

This small volume, of two hundred and thirteen 16mo pages of text, contains within its necessarily prescribed limits, as the author states in his preface, a consideration of those parts of this extensive subject which his experience as a coroner's physician of the city of Philadelphia for a period of six years leads him to regard as the most important for practical purposes. The author gives valuable practical instructions to the medical jurist as to the manner of making post-mortem examinations in medico-legal cases so as best to preserve the results in a form available as evidence in a subsequent trial in a court of justice. But the advice given to the medical-expert witness at page 20 is likely to involve him in difficulty, if followed in every State. The advice is as follows: "If a physician be subpœnaed as an ordinary witness, which summons he must obey, and, having given his evidence in court, the commonwealth or the defence endeavors to obtain an expert expression of opinion upon the facts testified to, in addition to the mere facts themselves, the physician is *justified in refusing to answer.* . . . The court has no more right to take advantage of the physician's professional knowledge and skill in extorting evidence from him without proper compensation than it would have to take his property: for his knowledge is his property, his capital."

The rule stated thus broadly does not express the law, for a medical expert is not legally justified in every State in refusing to give his professional opinion until reasonable compensation is made or secured. There are two lines of decisions,—the one affirming, the other denying, the right of the expert so to refuse, and the weight of authority is apparently with the latter view. The legislature must furnish the remedy, and this has been done in a few States by a statute giving special compensation to the expert, and in such cases his fee is secured by being taxed as costs. Except, therefore, there be a decision justifying the physician in refusing, the only safe course is to testify, when required by the court to do so, if he would escape punishment for contempt.

Nor does experience incline us to agree with the author in his statement, at page 153, that, of actions against physicians for malpractice, "by far the greater number of such cases are purely for the purpose of blackmail."

With the exception of purely legal matters, therefore, this little book is altogether one of the best, either to give the student a general knowledge of this most interesting subject or to furnish an outline or introduction to the more complete and exhaustive treatises on medical jurisprudence.

NOTICE.

THE SAMUEL D. GROSS MOMUMENT FUND.

A COMMITTEE has been appointed by the Alumni Society of the Jefferson Medical Society to collect funds for a bronze statue to be erected at Washington, and it will please all friends of Professor Gross to know that the fund is increasing in amount, it having reached such proportions that only four thousand dollars additional are required to complete the monument. It is needless to dwell upon the inestimable services rendered to medicine by Dr. Gross, and it is plain that his friends are only too glad of the opportunity to testify in this manner their regard for him.

Subscriptions may be sent to

DR. JOHN B. CHAPIN,
Chairman and Treasurer of the Committee,
Pennsylvania Hospital for the Insane,
Forty-fourth and Market Streets, Phila.

Or, MR. GEORGE KYLE, 1715 Willington Street, will call upon any one that desires to contribute to this fund.

NOTE TO CONTRIBUTORS.

Manuscript accepted will be liberally compensated or reprints furnished in lieu of such compensation.

It is distinctly understood that all articles accepted are for our exclusive use and are not to appear in any other publication.

All matters of business and subscriptions to be sent to the Publishers. Manuscripts and books for review should be addressed to the Editorial Office, 319 South Eighteenth Street, Philadelphia. EDITOR.

INTERNATIONAL
MEDICAL MAGAZINE.

Vol. II.] MAY, 1893. [No. 4.

ORIGINAL COMMUNICATIONS.

THE STATUS OF THE USES OF COCAINE IN GENERAL MEDICINE, AS BASED UPON THE EXPERIENCE OF PHILADELPHIA PHYSICIANS.

BY LEWIS H. ADLER, JR., M.D.,

Adjunct-Professor of Diseases of the Rectum, Philadelphia Polyclinic and College for Graduates in Medicine.

(Concluded from page 261.)

To summarize the testimony herein recorded as to the value of cocaine in general medicine, it will be in order to consider alphabetically the various diseases and conditions in which the drug has been used.

1. *Alcoholism.*—In several cases of chronic alcoholism cocaine did not appear to have any effect, or if any, but an indifferent result in relieving the nervous depression and the craving for the stimulants (26).[1]

2. *Angina (Simplex).*—In the tickling cough of an acute cold in the throat cocaine acts promptly (25).

3. *Asthma.*—In two cases of asthma with moderate emphysema a two-per-cent. solution of the drug applied to the Schneiderian membrane promptly relieved the attack and seemed to delay its recurrence (2).

4. *Bright's Disease.*—In chronic Bright's disease complicated with typhoid fever and suppression of the urine the administration of cocaine in one-eighth-grain doses (in addition to digitalis and whiskey, remedies

[1] From here on, wherever figures are used at the end of a paragraph, they indicate the authority or authorities referred to as numbered in the preceding part of the paper.

previously employed) produced a copious secretion of urine within a few hours after its use (9).

Good service has resulted from the use of cocaine in the anasarca from acute Bright's disease (29).

In chronic Bright's disease (of both the parenchymatous and interstitial varieties) the drug causes a marked increase of the daily excretion of urine (30).

5. *Bronchitis.*—Cocaine is of no benefit in the cough due to bronchitis (25).

6. *Cardiac Dropsy.*—In the dropsy of cardiac origin cocaine is of use as a diuretic, and especially is this noticeable in cases in which the pulse is feeble and the heart's action weak. In these cases one-quarter-grain doses, increasing to a grain, were administered every two or three hours (29).

7. *Cardiac Stimulant.*—As a cardiac stimulant cocaine is not only useful but it is prompt and decided in its action (6, 9, 21, and 23). To this statement we find several exceptions taken (7 and 30).

Dr. F. A. Packard believes the drug to be useless as a heart stimulant, and Dr. Charles W. Dulles was disappointed in its employment for this purpose in a case of cardiac weakness associated with valvular insufficiency.

Dr. James C. Wilson employed the drug a number of times in the latter stage of enteric fever to combat the tendency to cardiac asthenia. For this purpose he administered it by the mouth and hypodermatically in doses of one-sixth of a grain, repeated at intervals of from two to four hours, or, where the effect was pronounced, at somewhat longer intervals. In a fair proportion of the cases the drug appeared to have the properties of a cardiac stimulant; in other cases no obvious results followed its use; and in a limited number of cases its effect upon the circulation appeared to be distinctly depressant. As Dr. Wilson invariably employed the drug in the form of compressed hypodermatic tablets prepared by the same manufacturers, he believed the depressant effects observed in certain cases to be due to idiosyncrasy (41).

8. *Catarrh, Gastric.*—In the vomiting of gastric catarrh, alcoholic or otherwise, cocaine in one-quarter to one-grain doses, given alone or with bismuth, on an empty stomach, has given instant relief (26).

9. *Catarrh, Acute Nasal.*—In these cases cocaine used in the form of a spray (ten-per-cent. solution) has not only relieved but cured the catarrh. For a similar purpose the drug has been combined with Hegeman's camphor ice made into a plug or suppository and inserted into the nostril. The result has been equally satisfactory (10).

10. *Cerebral Stimulant.*—As a cerebral restorative or excitant the coca-leaf in the form of a reliable extract, alcoholic or aqueous, is to be preferred to the alkaloid. The fluid extract of the coca-leaf seems to contain other principles and to differ from cocaine in its action almost as opium differs from morphine or cinchona from quinine (6). Dr. James H. Lloyd

believes cocaine to be very potent as a brain stimulant, but he thinks that its use as such is apt to do more harm than good (24).

11. *Collapse, General, etc.*—As a temperature-elevator in cases manifesting a tendency towards coldness, collapse, and prolonged subnormal temperature, the administration of cocaine is useful (6).

12. *Coryza.*—The consensus of opinion seems to be opposed to the use of cocaine in the nares unless extreme care be observed and the patient be kept in ignorance as to the remedy employed. In two cases of coryza in which the drug was used toxic symptoms ensued. The strength of the solution used in one case was only two per cent. (2, 12, and 24).

It is said that cocaine does not effect a cure in this disease for the reason that it does not possess germicidal properties (24).

13. *Cystitis, Chronic.*—In these cases cocaine will afford temporary relief when injected into the bladder, but it must be used with care and caution (9 and 33).

14. *Debility, Senile.*—Cocaine has been used in cases of debility of old age. In combination with strychnine and quinine, in doses of one-eighth of a grain, it has been found to be a safe and good tonic (34). Dr. J. Cheston Morris does not think it equal in these cases to the elixir of the valerianate of ammonium (28).

15. *Diuretic.*—In the dropsy of both renal and cardiac origin the internal use of cocaine in solution or pill form has proven a useful diuretic when given in doses of from one-eighth to one-quarter of a grain administered every two hours. Even in cases of complete suppression of urine, which was not relieved by the use of digitalis and whiskey alone, cocaine given in the manner and dose mentioned soon caused the urine to be secreted (9, 19, 23, 29, 30, and 37).

16. *Dysenteric Disorders.*—Cocaine in the form of a suppository has been used with some advantage in relieving the tenesmus of dysenteric disorders, especially in the entero-colitis of children (24).

17. *Dyspepsia.*—Good results have sometimes followed the use of cocaine in the several varieties of this disease. The dose employed has been from one-quarter to one grain repeated several times a day (8, 15, 16, and 20).

Dr. S. M. Wilson states that in cases of dyspepsia where much general weakness was complained of the administration of cocaine gave temporary relief only; later on the stomach-trouble seemed to be aggravated (42).

18. *Ether Nausea.*—Sometimes a single dose of cocaine will stop the nausea and retching following ether-anæsthesia. In other cases the dose (a quarter of a grain) will have to be repeated hourly until relief is obtained (22 and 36).

19. *Fever, Hectic.*—The wine of coca has been found superior to other remedies in relieving the suffering from hectic fever (31).

20. *Fever, Typhoid.*—Cocaine has been found of service as a general stimulant in cases of exhaustion occurring during the course of prolonged

diseases, such as typhoid fever, particularly when collapse was threatening. In febrile conditions accompanied by irritability of the stomach, the use of the drug ten or fifteen minutes before giving food will enable nourishment to be retained when otherwise it would be rejected. To combat the tendency to cardiac asthenia occurring in the latter stages of enteric fever, cocaine may be given by the mouth or hypodermatically in doses of one-sixth of a grain repeated at intervals of from two to four hours. In the tremor following typhoid fever cocaine in some cases seems of permanent benefit, and in others its effects are only transitory (12, 13, 16, and 41).

21. *Gastric Irritability.*—Cocaine is useful in many cases of vomiting dependent upon gastric irritability arising from various causes. It is advisable in cases of violent nausea and emesis attendant upon gastric irritation from the ingestion of faulty articles of diet, etc., to precede the administration of the cocaine by lavage in order to get rid of the irritants before applying the sedative. In cases of sympathetic vomiting this preliminary cleansing of the stomach is not necessary. The dose of the drug is from one-sixteenth to one-quarter of a grain in one or two teaspoonfuls of water (6, 13, 15, 16, 19, 20, 29, 36, 37, 39, and 40).

22. *Gastritis.*—Excellent results have been obtained from the use of cocaine in those cases, such as gastritis, etc., in which the drug could exert a direct local effect (34).

23. *Gastrodynia.*—In cases of gastrodynia, cocaine in one-quarter to one-grain doses, given alone, or in combination with bismuth, on an empty stomach, has given instant relief (26).

24. *Hay-Fever.*—In these cases, where there is often a markedly neurotic element, Dr. J. H. Lloyd believes that the relief obtained from the use of cocaine is often followed by a reaction which leaves the patient distinctly worse. This gentleman states that he has never known its use to cure this disease (24).

In the asthma of hay-fever, Dr. James M. Anders has found of service a two-per-cent. solution of the drug applied to the nares (2).

25. *Hysteria.*—As a brain-stimulant cocaine should not be employed in this disease, both because its relief is slight and temporary, and especially because of the danger of forming the cocaine-habit (24).

26. *Impotence.*—In two cases of impotence the wine of cocoa was given a full trial, but without obtaining any result.

27. *Larynx or Pharynx, Hyperæsthesia of.*—The use of cocaine has been beneficial in cases of hyperæsthesia of the larynx or pharynx when unaccompanied by any structural lesion in them or in any other organ. The drug should be given in doses of from one-tenth to one-sixteenth of a grain every four hours (25 and 33).

28. *Melancholia (Acute and Chronic).*—Cocaine has been used in these cases, but with negative results, except in the acute forms of melancholia agitata, when its employment seemed to give ease to the patient (15 and 24).

29. *Morphine-Habit.*—Cocaine has been used to combat the opium-

habit; the plan of treatment being a descending dose of opium and an ascending dose of cocaine. The limited experience had with it in these cases is rather unfavorable to its employment (26 and 34).

30. *Phthisis.*—Cocaine as a spray to the throat and larynx in the sore-throat of advanced phthisis is a temporary relief. Its action, however, is very fugacious, and the patient is apt to want it constantly. Combined with cubeb and morphine in the form of a troche, cocaine in one-twentieth of a grain-dose has relieved the cough of phthisis. In the distressing vomiting so often seen accompanying pulmonary phthisis, which is due to the cough, cocaine has been given, but not with satisfactory results (24, 26, and 27).

31. *Pregnancy, Vomiting of.*—For the vomiting of pregnancy cocaine occasionally gives relief, but more often it fails to accomplish the desired effect. It is probably in the neurasthenic class of these cases, as pointed out by Dr. William L. Taylor, that cocaine is useful.

It should be given by the mouth in doses of from one-tenth to one-quarter of a grain, repeated every two or three hours.

It may be advantageously combined with camphor hydrobromate (grain one) or zinc phosphide (grain one-tenth) (9, 10, 17, 26, 30, 34, 36, and 40).

32. *Pyrosis.*—Cocaine given by the mouth in doses of an eighth of a grain has been successful in relieving severe pyrosis (33).

33. *Stricture, Œsophageal.*—In cases of œsophageal stricture cocaine has been used with benefit for two purposes: to allow of the painless passage of the œsophageal bougie, and to enable the patient to eat with comfort by relieving the additional spasmodic constriction which is produced by the contact of food with the mucous membrane of the œsophagus (30).

34. *Tonic, General.*—Results obtained from the use of cocaine as a general tonic have varied, being favorable and otherwise. When employed for this purpose it should be given in the form of the wine of coca, or in the form of a reliable fluid extract, alcoholic or aqueous (6, 11, 12, and 42).

35. *Tremor.*—Indifferent effects have been noted as a result of the use of cocaine in tremor following typhoid fever (12 and 15).

36. *Ulcer, Gastric.*—In the pain and vomiting of gastric ulcer cocaine in one-quarter to one-grain doses has proven very effective. Its administration has also enabled the patient to eat and retain an increased amount of nutriment (26 and 34).

In the foregoing summary I trust that mention has been made of all the diseases detailed in the various replies incorporated in this paper.

I have also endeavored to represent, in a thorough and impartial manner, the general sentiment as to the value of the drug in each of the diseases enumerated.

TOXICOLOGY.

The next point for consideration is the untoward effect noted or peculiar susceptibility of patients to the toxic effects of cocaine, with the object

in view of showing the symptoms produced by an overdose of the drug or from its prolonged use, and the treatment to be pursued in such cases.

A.—BLADDER OR RECTUM.

Case I.—Cocaine was injected into the bladder to relieve dysuria. About two grains were used at each injection. After each dose was administered the constitutional manifestations of the drug were noticeable. The primary effect was stimulation of all the senses. Although the patient might be tired and weary before the injection was given, its use would at once cause her to become bright and vivacious, and her mind would be relieved of all feeling of care. Occasionally palpitation of the heart was produced.

On two occasions alarming results followed the use of the injection. The first time the patient became delirious. The delirium passed off in about an hour and left no untoward effects. On the second occasion, within fifteen minutes from the time the drug was given she became partially delirious, and twitching of the hands and face was noticed; the pulse became rapid and feeble, and palpitation of the heart was marked. The skin became cold and clammy. Stimulants were given, and the bladder was thoroughly cleansed. In about half an hour the alarming symptoms had disappeared (9).

Case II.—A woman upon whom Emmet's method of operating for the relief of a badly-lacerated perineum was performed. The patient had for several years suffered from severe attacks of cystitis, the inflammation of the bladder never entirely subsiding. For several weeks prior to the operation she had succeeded in obtaining great relief from the dysuria by the injection into the bladder of from ten drops to a half-drachm of a four-per-cent. solution of cocaine. On the second day after the operation on the perineum a glycerin enema was given to open the bowels. It was unsuccessful, however, and the patient complained of such severe pain, both in the rectum and bladder, that the nurse was directed to use a drachm of cocaine solution with the next bowel-injection, and to repeat it in an hour if the patient was not relieved. Shortly before these instructions were given the nurse had used a drachm or more of the cocaine solution in the bladder, and, not thinking to send the physician word to that effect, had followed it up with the further quantity in the bowel, so that the patient received altogether nearly three drachms of the solution, representing over seven grains of the salt.

Shortly after the second dose was administered the patient's condition was as follows: general numbness, followed by sensory and then motor paralysis of the limbs; the paralysis rapidly involved all the voluntary muscles, except those of the eye.

The diaphragm was strongly affected, so that it was with the greatest effort that she was enabled to expand the lungs. Consciousness was not lost, even for an instant; on the contrary, her mental activity was increased,

and her perceptive faculties were particularly acute. The pupils were moderately dilated. Her body was cold and pale; the pulse rapid, and at times almost wanting at the wrist; at one time it was one hundred and eighty to the minute; the respiration was rapid and shallow; sensation was entirely lost; the chafing, rubbing, and pinching of the body by four strong female domestics was unfelt, as was also the heat from hot-water bottles.

Hypodermatics of digatalis, ether, ammonium, and strychnine were given, and inhalations of nitrite of amyl. The latter drug and the ether were believed to have been the effective agents in causing the patient's recovery, aided, no doubt, by the means applied to stimulate the skin.

In the process of recovery, motion returned first, and then sensation, beginning in the upper part of the body and slowly extending down to the toes. The entire episode occupied about six hours, during two of which she appeared to be dying, and believed herself that death was near.

A powerful factor in aiding the patient's recovery was a strong determination not to die. It was thought that this intense mental effort offered to the respiratory and circulatory systems was just sufficient to tide over the period of impending collapse, which would have been fatal had she yielded and made no effort to conquer it.

The subjective symptoms as described by the patient were: the attack commenced with waves of cold and numbness, which began at the feet and quickly surged up over the body, occupying about five seconds and culminating in a feeling of imminent suffocation (33).

B.—HYPODERMATIC INJECTION.

One-third of a grain of cocaine used hypodermatically for the relief of fatigue and loss of sleep acted as a decided stimulant, and prevented sound sleep for about twelve hours. There was headache and a loss of appetite the next day, but for only a short time (42).

C.—INTERNAL USE.

Case I.—Cocaine given in mistake for codeine, in a cough mixture of syrup of acacia; of which solution a teaspoonful, containing one-quarter of a grain of cocaine, was ordered to be taken every three hours. In a short time the patient, a delicate young lady of nervous temperament, complained of a feeling of oppression, indefinite malaise, and an irritation of parts of the skin which was accompanied by a slight eruption. These symptoms soon passed away when the medicine was discontinued (5).

Case II.—In a case where wine of coca had been recommended as a tonic, the patient procured a well-known preparation, which was taken without producing any untoward effects. On one occasion the brand of wine in use was substituted by another, manufactured by a different firm, who are well known and have an excellent reputation. Shortly after the ingestion of a small quantity of the new preparation the patient was attacked by faintness, a feeling of sinking away, and shortness of breath (12).

CASE III.—The internal use of cocaine has occasionally been followed by cardiac oppression or palpitation, and a fulness or lightness of the head, and by a sense of general well-being (26).

CASES IV AND V.—In one case the use of cocaine, a quarter of a grain, every two hours, caused exhilaration, and in another case one-half of a grain every three hours caused slight delirium (29).

CASE VI.—In some cases the administration of cocaine in small doses, repeated frequently, and gradually increased, with the object of obtaining the relief sought, has produced a marked wakefulness. This has not been an unpleasant wakefulness, but a comfortable, restful condition (36).

D.—NOSE AND THROAT.

CASE I.—The too free local use of a two-per-cent. solution of cocaine in a case of coryza caused nausea, great physical prostration, partial unconsciousness, and a marked tendency towards syncope. This condition lasted for twenty-four hours (2).

CASE II.—A lad who had an application of a solution of cocaine, strength unknown, made to the inside of the nose at one of the dispensaries, presented the following symptoms when seen by the medical attendant some hours afterwards,—resembled somewhat the appearance of atropine-poisoning: face flushed and pupils widely dilated, muscles twitched, and there was slight muttering delirium. Pulse and respiration not disturbed. Recovery occurred after the lapse of several hours (5).

CASE III.—A few drops of a solution of cocaine were dropped into the nostrils of a patient suffering with a coryza. The application produced such alarming symptoms that the family became alarmed. The faintness peculiar to cocaine-poisoning was present (12).

CASE IV.—Cocaine used in the form of a spray to the throat in a case of acute laryngitis caused the patient to complain of a feeling of great weight in her legs and thighs, and a sensation of suffocation. The dose was not more than twenty minims of a four-per-cent. solution. The symptoms soon disappeared, and no ill effects followed (33).

CASE V.—In three cases in which the excessive use of nasal sprays of a rather strong solution of cocaine were indulged in, the most prominent toxic symptoms were: extreme physical and mental depression, with restlessness, insomnia, loss of appetite, gastric and intestinal indigestion, and constipation alternating with diarrhœa. In all three cases the patients recovered very rapidly after the use of cocaine was discontinued (41).

E.—URETHRA.

The following symptoms ensued in four cases of cocaine-poisoning from the use of the drug in the urethra: palpitation of the heart, muscular tremors, insomnia, and one case had marked hallucinations, and another had severe convulsions (19).

From a study of these cases we may deduce the following facts relative to cocaine-poisoning:

1. The effects of acute cocaine-poisoning become manifest within a short time after the ingestion of a toxic dose of the drug.

2. Among the symptoms produced by a toxic dose of the drug may be mentioned stimulation of all the senses; general numbness followed by sensory and then motor paralysis; hallucinations; convulsions; muscular tremors; insomnia; palpitation of the heart; rapid, feeble pulse; syncope; dilated pupils; cold and clammy skin; rapid and shallow respiration; dyspnœa; indefinite malaise, or a feeling of oppression; cutaneous eruption; etc.

3. The treatment indicated in these cases is rest in the recumbent posture combined with hypodermatics of ether and inhalations of nitrite of amyl (33).

COCAINE HABITUÉS.

The final subject for consideration in this paper is as to the likelihood of the use of the drug leading to the formation of the cocaine-habit. From a careful perusal of the opinions herein quoted I think that the following deductions may be drawn:

1. The cocaine-habit does exist; but the majority of such cases are persons addicted to the conjoint use of alcohol, or of morphine, or both.

2. The prolonged internal use of the drug may lead to the formation of the habit.

3. Extreme care should be exercised in ordering the drug for use in the nares, throat, urethra, rectum, and bladder.

4. Owing to its asserted aphrodisiac tendency, cocaine should be used cautiously in young persons.

5. In all cases in which cocaine is used its identity should be concealed from the patient. Therefore the drug should not be left to the indiscriminate use of the patient.

6. In properly-selected cases cocaine can be pushed to its full physiological effects, for in such persons there is apparently no more reason to fear the formation of the cocaine-habit than there is the morphine-habit from the medicinal use of morphine.

Treatment of the Cocaine-Habit.—The treatment in these cases is the one so successfully employed by the late Dr. Charles Meigs Wilson (40),—to give (daily) diminishing doses of cocaine, reducing the amount one-half every forty-eight hours; exhibiting it hypodermatically, isolating the patient from all communications with friends, and cutting off every possible avenue of supply; endeavoring to give the patient's mind moral support and interest, and keeping him under rigid control. So soon as the dose of cocaine is reduced to an infinitesimal amount, plain water is given hypodermatically. These means, combined with the use of iron, strychnine, and the resort to mental occupation, will usually effect a cure,—save in those cases in which what may be called the moral equilibrium is destroyed.

NURSING IN NERVOUS DISEASE, PARTICULARLY IN HYSTERIA.[1]

BY GUY HINSDALE, M.D.,

Assistant Physician to the Orthopædic Hospital and Infirmary for Nervous Diseases; Physician to Out-Patients, Presbyterian Hospital; Lecturer on Climatology in the University of Pennsylvania, Philadelphia.

THE term nervous disease covers a very wide range of affections: the case of *apoplexy* with its rapidly fatal course or the slow, lingering, partial recovery with the paralytic arm or leg; the *epileptic* spasm that may be the forerunner of a series of convulsions which render a nurse or an attendant necessary to the safety of the subject; the sufferer from *neuralgia* in its various forms, where the slightest exertion will set the facial or sciatic nerve throbbing with pain; the ataxic or spastic paralytic, whose form of locomotion is impaired and whose sufferings it is almost impossible to relieve for any length of time; finally, the hysterical and insane, whose erratic mental condition requires the highest quality of medical art to deal with, and for whom often far more can be done by the good judgment, tact, patience, and properly-directed kindness of a nurse than by all the medicines in the drug-shop.

It is this last class of affections, particularly the hysterical, that I wish to call your attention to this evening.

The supply of good nurses in nervous disease is not equal to the demand; the ranks are constantly being depleted by various causes. Those who have nursed a patient after a surgical operation, be it cœliotomy or amputation, will find very much the same thing required in a second case of cœliotomy or amputation; but no matter how many cases of hysteria you may have to deal with, every one will be found different and will call for very different treatment. At any rate, the successful nurse as well as the successful physician will never undertake to adopt routine methods in such cases. The moment the patient discovers that she is being put through a routine system without consideration for individual needs and peculiarities, from that time she loses faith in the medical director.

The most successful plan of treating these cases is by a combination of various agencies, which were first grouped together and applied simultaneously to the treatment of neurasthenics by Dr. S. Weir Mitchell of this city. Indeed, the plan of treatment is usually known in this country and in Europe by his name. It is sometimes charged against the system that

---

[1] Delivered before the class of nurses in training at the Presbyterian Hospital, Philadelphia.

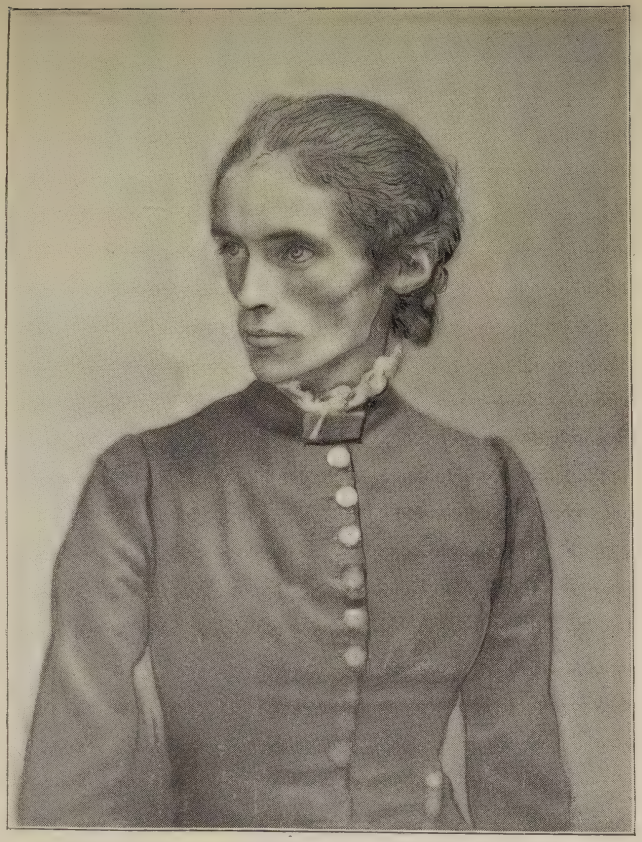


FIG. 1.—Appearance of a nervous patient before commencing treatment.

FIG. 2.—Appearance of the same patient after complete recovery was established.

it consists of routine, but, although the various agencies may be continued in use from one to two or even, in exceptional cases, three months, it is the personal influence, tact, and maintenance of authority founded on a thorough appreciation of the various and often deceptive features of the case that make the line of treatment the farthest degree removed from routine method. If it has failed in the hands of many of those who have undertaken it, the lack of success has not been due, as a rule, to the fact that the physical agencies have not been properly applied; these can be reduced to a more or less constant element of practice; they conform pretty closely to the written page; it is that unwritten, inexpressible personality that avails.

This is the field for the exercise of what is sometimes spoken of as "will power," and it is in this class of cases that occur those extraordinary instances of "faith cure" and which offer a field for the so-called "Christian scientists."

The general treatment of a typical case of hysteria will involve a great deal of time and money. Hysteria is usually seen in women from fifteen to fifty years of age, although these limits may be exceeded, and in exceptional cases hysteria may be observed in boys and men.

Specialists in nervous disease are usually consulted after the hysterical condition has been well established. The history is usually somewhat as follows:

The patient has perhaps undergone a season of trial or has encountered some prolonged strain. Perhaps it has been in nursing a relative during months of anxiety. She has denied herself air, food, and refreshment of mind; she becomes thin and pale; has a poor appetite; is easily wearied, and finds a refuge finally on the sofa or bed.

Aches and pains develop and sleep is poor. By this time unwise medication may have added to the trouble and actual dyspepsia or constipation may have to be contended with. It will be a mistake for you to conclude, because the diagnosis of hysteria has been made, that the affections which are apparent in the patient are, after all, imaginary. This is by no means true. There are actual disorders; there may be even a true paralysis as well as a false paralysis of hysteria. Most of the real affections that hysterical patients suffer from are the results of misdirected treatment. An effort should be made to raise the standard of health generally, to revolutionize the entire manner of life, and give the patient the opportunity of making a fresh start on a different plane.

Without discussing the causes that have brought the patient to bed, whether it may have been overstudy, devotion to society, disappointment in love, bereavement, or the care of the household,—whatever the cause is, you will find that they have usually exhausted the resources of many physicians, worn out various nurses, or overtaxed in their selfishness the various members of their unfortunate families.

Instead of being ennobled by sickness they become self-centred, and lose that control of their emotions and wants, that regard for others which

it is the duty of every one to observe in this world. In the typical case the invalid has become a tyrant surrounded by a group of slaves. It often happens that hysterical invalids complain greatly of a sensitive spine. Exertion is therefore considered to be harmful. Reading may be given up because the eyes are weak, and others have to read to her. The light finally is painful, and the invalid's room has to be darkened. That I may not seem extravagant I will quote what Dr. Mitchell says of these cases: "A draught of air is supposed to do harm, and the doors and windows are closed, and the ingenuity of kindness is taxed to imagine new sources of like trouble, until at last, as I have seen more than once, the window cracks are stuffed with cotton, the chimney is stopped, and even the keyhole is guarded. It is easy to see where all this leads to: the nurse falls ill, and a new victim is found. I have seen an hysterical, anæmic girl kill in this way three generations of nurses. If you tell the patient she is basely selfish, she is probably amazed and wonders at your cruelty. To cure such a case you must alter as well as physically amend, and nothing else will answer. The first step needful is to break up the companionship, and to substitute the firm kindness of a well-trained nurse."

The patient should be carefully examined for the existence of any organic disease. In certain instances, such as advanced Bright's disease or in tubercular conditions, malignant disease, or in the case of true melancholia, the rest treatment is unadvisable.

Cardiac affections or stomach disorders are, as a rule, incidentally relieved.

The essential features of the treatment are,—

I. Seclusion.
II. Certain forms of diet.
III. Rest in bed.
IV. Massage (or manipulation).
V. Electricity.

It is the combination of these five measures that brings success.

I.—SECLUSION.

Not only is it obviously impossible to treat these cases in a general hospital ward, but it is not desirable to undertake the treatment of hysteria within the patient's home, no matter how remote and quiet a room may be proposed and no matter how strict a quarantine may be promised by members of the family. It is against the whole spirit and plan of treatment. Home connections must be severed for the time being; the interests of family, the accustomed sounds, anxiety for the comfort of others, petty annoyances, had better be left hundreds of miles behind. The patient must consent to be placed under a new authority as implicitly as the soldier who leaves home and business behind and obeys the order to halt, or march, with perfect confidence in his general's ability to direct and unquestioning loyalty even in the darkest hours.

Seclusion is a feature of the treatment which a patient at first often

FIG. 3.—Patient's appearance before treatment was commenced.

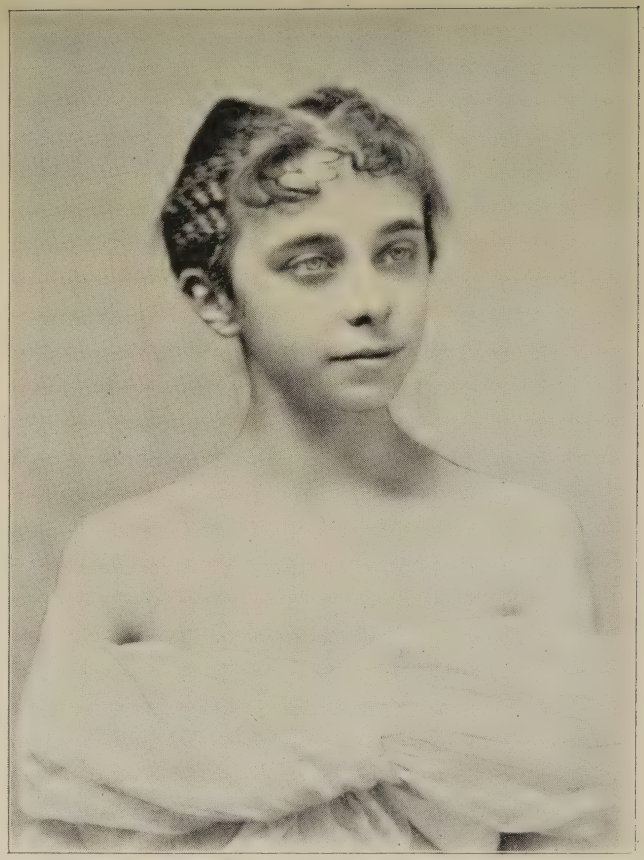


FIG. 4.—Same patient after complete recovery.

objects to strenuously, but which she herself will after a while admit is essential to success.

Seclusion does not mean, by any means, solitary confinement, nor should a room be chosen that is so dark or unattractive as to give the slightest ground for calling it a prison. It should be sunny, especially in autumn and winter, which, by the way, is the better portion of the year to conduct the treatment.

The patient requires the entire time of one nurse. As previously stated, she should be a well-trained hired nurse. She ought to be a stranger to the patient, "a young, active, quick-witted woman, capable of firmly but gently controlling her patient. She ought to be intelligent, able to interest her patient, to read, and to write letters. The more of these cases she has seen and nursed, the easier becomes the task of the doctor. It is always to be borne in mind that most of these patients are over-sensitive, refined, and educated women, for whom the clumsiness, or want of neatness, or bad manners, or immodesty of a nurse may be a sore and steadily-increasing trial. To be more or less isolated for two months in a room with one constant attendant, however good, is hard enough for any one to endure; and certain quite small faults or defects in a nurse may make her a serious impediment to the treatment, because no mere technical training will dispense, any more in the nurse than in the physician, with those finer natural qualifications which make her training available. But one nurse will suit one patient and not another, so that I never hesitate to change my nurse if she does not fit the case." These are Dr. Mitchell's words, and certainly no one is better qualified to speak.

The daily visit from the doctor in charge brings with it encouragement, strength, perhaps a firm but gentle remonstrance, but never argument with the patient. The nurse makes a note of all directions given, and shows the physician the schedule which is her guide in the performance of the duties of the day. If any omissions or irregularities have occurred, it is her duty to report upon them at that time, not, however, in the presence of the patient.

At another hour there is a visit from a physician who administers electricity, and at another hour there is a visit from the masseuse. Thus there are by day no long intervals in which the patient can grow lonely.

II.—CERTAIN FORMS OF DIET.

Early in the morning, on waking, there is given a glass of milk or cocoa, in some cases coffee. The patient is sponged after this, usually every day, but in some cases, where it seems to be fatiguing, only three times a week. Milk is not only the chief but for the first fortnight the only article of diet. It is given in small quantities at frequent intervals, and according to the plan of Dr. Karell, of St. Petersburg.

The milk is kept with the greatest care in clean vessels. It is used skimmed, and is better if obtained from the cow twice a day. At first the

skimming should be thorough, and it is therefore not desirable to have the rich milk of the Alderney cow.

At first the amount given is not over four ounces every two hours. The amount taken may be increased, but the interval may not be lengthened beyond three hours. The last glass of milk should be given at bedtime, and if the patient be wakeful a glass may be left beside the bed, covered, so that it may be taken at night if awake. It may be administered either warm or cold.

In taking milk the patient does not drain the glass in a few draughts, but sips it in mouthfuls. Sometimes a trifle of tea or coffee or caramel is used to flavor it if the taste is seriously objected to. But they are abandoned later. Lime-water may be used if acidity ensues. Sometimes a little barley-water or rice-water may be given with advantage. The patient, and I may add the nurse, need not be disappointed if there should be a slight loss of weight at first. Patients have been weighed while undergoing treatment, but of course this is not practicable, as a rule.

Sleepiness may be present during the first week or two after the new aspect of the treatment has worn off. Constipation usually has to be treated with a gentle laxative. The frequent passage of urine must also be expected and need not excite comment by the nurse. For constipation, a quarter of a grain of aloes and two grains of dried ox-gall may be given in a pill at night. The amount of milk taken in a day will run up from two to four quarts. After the tenth day malt is also given before meals. Johann Hoff's is advised, and the quantity should be from two to four ounces.

Many persons eat little because of the fatigue of feeding. If there is no exertion and the patient is fed by the nurse, much larger quantities than usual may be taken.

At the close of the first week of treatment, a pound of raw beef made into a soup may be given in addition to the milk. It is make by chopping up one pound of raw beef and placing it in a bottle with one pint of water and five drops of strong hydrochloric acid. This mixture stands all night, and in the morning the bottle is set in a pan of water at 110° F. and kept two hours at about this temperature. Strain through a stout cloth and squeeze the mass till nearly dry. The resulting fluid is given in three portions daily. If the taste be objected to, the meat may be roasted a trifle on one side.

Alcohol is generally not essential excepting as found in the malt prescribed.

Iron is given to the anæmic in the form of subcarbonate of iron or lactate of iron in doses of four to six grains. Sometimes five grains of pyrophosphate of iron may be added to the malt and it is not recognized by the patient.

When the patient begins to sit up, strychnine may be added with iron and arsenic.

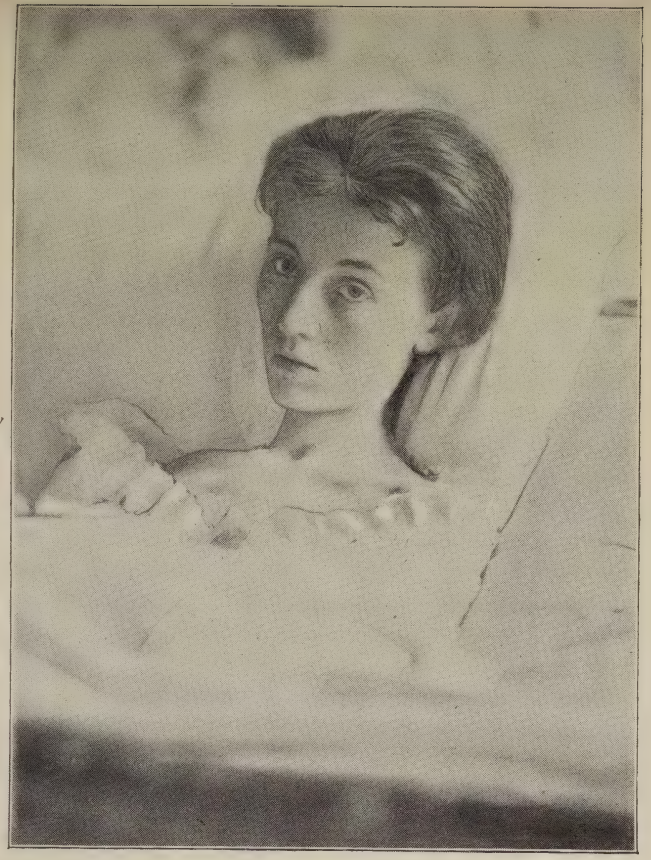


FIG. 5.—Appearance before treatment was instituted.

FIG. 6.—Appearance of the same patient after full recovery.

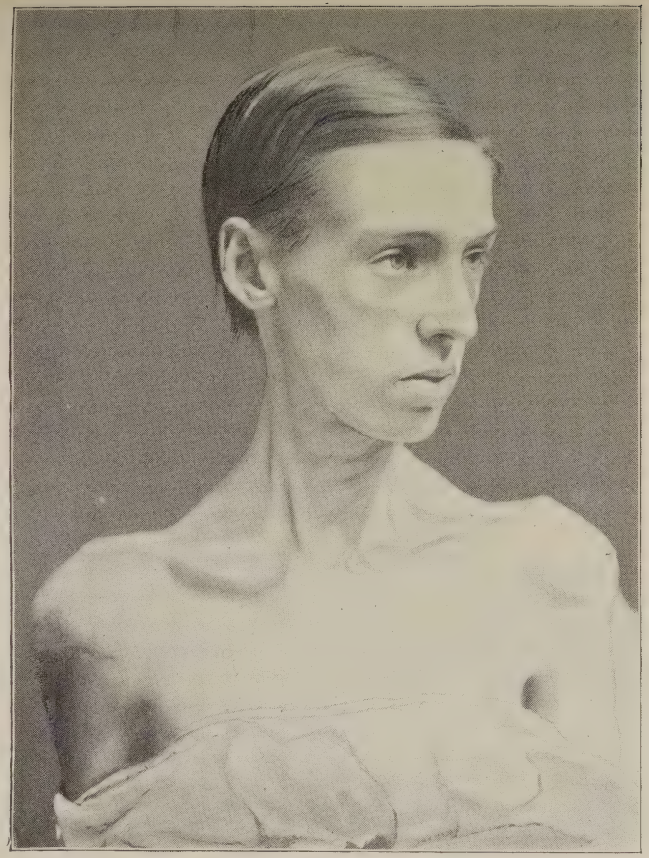


FIG. 7.—Condition before treatment.

FIG. 8.—After complete recovery.

III.—REST IN BED.

This will seem somewhat strange to those who have been accustomed to go about the house although in a languid manner. It will be far better also for invalids who recline on sofas and yet have not cared to relinquish all opportunity of seeing friends and hearing of the outer world. By going to bed in earnest and under no pretext walking about the room,—not even sitting up, and in some cases not even feeding herself,—the patient realizes that a new era has begun in her life history. The result is that she appreciates highly the opportunity to feed herself when the permission is given, perhaps after a fortnight or more of denial. At the end of a month or so she sits up a few minutes each day; the time is lengthened; at the end of two months perhaps she is allowed to sit in a chair. Every added privilege is appreciated as never before; liberty never seemed such a boon. It is like the hunger of a convalescent from typhoid fever. The whole aim in life, if you have maintained the case successfully, is now to occupy a sphere that before seemed impossible to attain, and with timely assurance you will have the satisfaction of seeing the patient launched upon the world made over anew. I am not drawing on my imagination or magnifying the results attained. They are matters of actual experience. I have witnessed the most extraordinary cures of what had been given up as hopeless invalids, and it is in these cases that so-called miracles are wrought.

But how is the bodily health maintained during this period of enforced rest and excessive feeding? This brings us to the fourth and fifth divisions already incidentally alluded to.

IV.—MASSAGE.

Massage is instituted to establish and maintain a good circulation; to secure nourishment of all the tissues; to prevent coldness of the extremities, and to insure a certain amount of passive exercise each day to compensate for the loss of opportunity for voluntary movement. This occupies an hour. It should not be given sooner than an hour after a meal, and should be followed by from one-half to one hour of quiet. There is one point that should be mentioned in regard to massage as well as electricity, and that is that during a menstrual period they should be administered only to the extremities. In some cases massage has given rise to uterine hemorrhage, and the possibility of this should be recognized.

Massage usually becomes more agreeable as the patient has more experience of it. Even the tender spines and sensitive abdomens can be gradually rubbed until these abnormal conditions disappear and are forgotten.

Massage is kept up for six weeks at least, and then the manipulator should spend awhile in exercising the limbs according to the Swedish system. A few movements of extension and flexion, at first assisted, then unassisted, and finally active movements gently resisted by the nurse are added, and by the seventh week massage is given only on alternate days.

V.—ELECTRICITY.

Electricity accomplishes somewhat the same result as does massage, but is more deep in its effect.

The battery for this purpose should be a faradic battery which is provided with a slow interrupter, automatic in its movement, as in the larger faradic battery of Flemming.

The disks of the electrodes should be circular, about one inch and a quarter to an inch and a half in diameter, and covered neatly with absorbent cotton, which should be renewed at frequent intervals. As in the case of massage, the operator should follow a centripetal method. The poles moistened with hot water, which need not contain salt, are placed about four inches apart upon the muscles in turn, beginning with the feet, legs, and thighs, and are moved about so as to move groups of muscles and individual muscles. Care must be taken to avoid placing the electrode over bony prominences, such as the shinbone, but always over a cushion of muscle. Tendons will, of course, give no reaction to the current, but the electrodes when properly placed cause a gentle muscular contraction unattended with pain. By being familiar with the so-called "motor points," the most advantageous positions for moving the muscles may be recognized and much time saved.

After the legs, the muscles of the abdomen, back, and loins are taken systematically, then those of the chest and arms. The neck and head are not touched. It is immaterial with regard to the position of the positive and negative pole; but the primary current is probably the better to employ. After the various muscles are treated so as to give four or five contractions to each, the battery is adjusted for the rapid interruption, and a flat electrode about two and a half by three inches is placed under the neck, and one of the ordinary disks is held at the sole of one of the feet. At the end of seven minutes the other foot is brought into the circuit, fifteen minutes being shared between the two feet.

It will be found that the bodily temperature will be raised from three-quarters to one degree Fahrenheit, and the muscles will grow stronger and rounder as the treatment progresses. In very nervous persons it is safe to begin *very cautiously*. Many have been shocked by electricity at various times, and have a dread of it. It is advisable to start by using electrodes disconnected with the battery, then gradually an imperceptible current, perhaps waiting an entire day before giving any current whatever. A thorough knowledge of the construction and operation of a battery, as well as of the anatomy of the surface of the body, is essential, for difficulties will arise in the best of hands, and when the current stops or goes with sudden starts, or hurts, or the electrodes chill, or the process fatigues, the value of the treatment is largely lost. Of all the elements in the treatment electricity may best be spared. It is decidedly best to intrust it to a physician. I do not advise a nurse to try it unless specially trained. I do

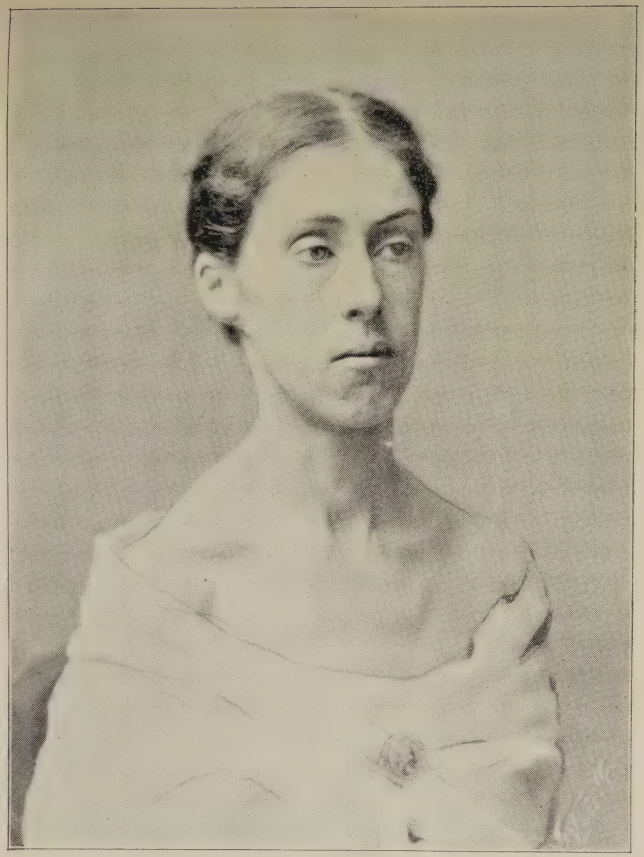


FIG. 9.—Appearance of patient before treatment was commenced.

FIG. 10.—Appearance of same patient after full recovery.

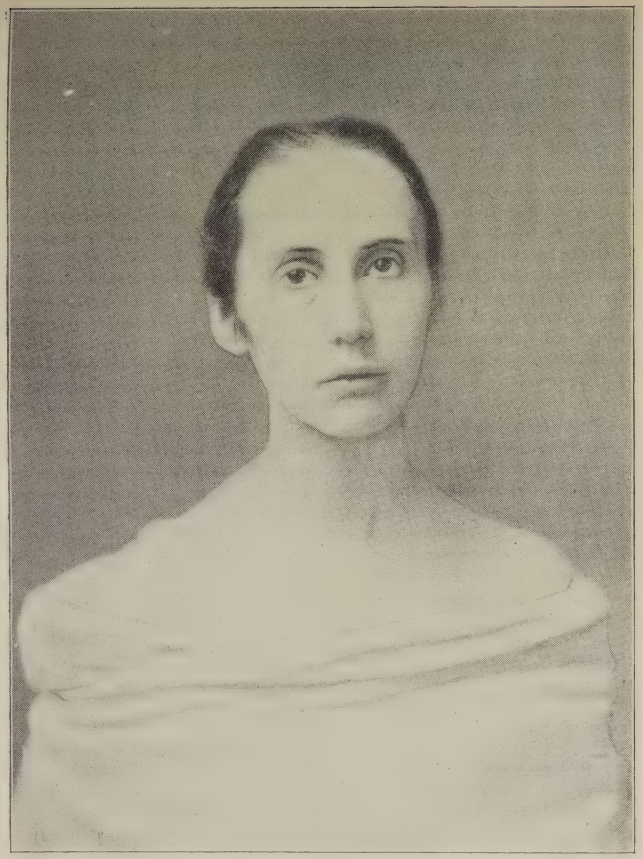


FIG. 11.—A nervous patient previous to treatment.

FIG. 12.—The same patient after full recovery.

not mean to say that there are not many other kinds of cases where a nurse can safely use it, but the difficulties that arise in these cases are great and must be promptly met, for it would be humiliating to acknowledge ignorance or defeat.

The difficulties that arise in using a battery are:

1. In the fluid. This grows weak after ten or twelve hours of use, and the battery gives notice by working irregularly.

2. In the liability of the zinc to come in actual contact with the carbons instead of hanging freely between them.

3. In the connections between the battery and the coil of wire in the interior of the battery.

4. The liability of the various metallic bearings and connections to become corroded by the acid.

5. In a defect in the silk-covered cords so that no current passes through them.

6. In not noticing that the connecting cords have become loosened from their proper attachments. This is very liable to occur, and must be watched.

7. In keeping the absorbent cotton wet enough to moisten the skin, but not so as to drip over the patient.

To illustrate the great advantages of the rest treatment I will show you photographs of six patients treated in this way; the changes are striking, but hardly more so than in a case now about to be discharged from the Infirmary for Nervous Diseases. The patient is a girl of fourteen, whose life was without doubt saved by these general measures and without the use of any special medication.

Mamie L. was admitted to Dr. Weir Mitchell's ward on November 20, 1891; a well-marked case of hysterical starvation. She had excited a great deal of interest in the town in which she lived, and was apparently near the grave. She was absolutely without appetite, would scarcely speak, and was a mere bundle of skin and bones, weighing forty pounds.

She was placed on complete rest in bed, gentle massage, milk diet, and an occasional laxative. House diet was soon added. In ten days she was allowed to sit up in bed; at the end of two weeks she ate of her own accord; in four weeks she commenced sitting up one hour out of bed, and there was no fatigue; in five and a half weeks she was allowed to be up and walk at will. Her appetite and digestion were good, and her bowels were usually regular, although she required an occasional laxative. Her body was much better nourished, and on the thirty-fourth day she showed a gain of thirty-two and a half pounds; on the day of her discharge, January 14, she showed marked improvement; she was bright, obedient, and willing, and she had gained in weight thirty-nine pounds.

On May 9 she was readmitted in somewhat a similar condition, and after forty days of treatment upon the same lines as before she was discharged much improved.

On August 22, 1892, she was admitted for the third time to the Infirmary, with all her symptoms repeated and at a weight of sixty-two and a half pounds. She was put to bed and placed on the usual house diet, with the addition of eight ounces of milk at and between meals. She was given massage, but, as before, electricity was not given. Her record is as follows:

August 22.—Weight sixty-two and a half pounds.

August 29.—Weight seventy-two pounds.

September 9.—Weight seventy-nine and a half pounds.

September 11.—Allowed to sit up half an hour and increase ten minutes daily.

September 16.—Weight eighty-one and a half pounds.

September 30.—Weight ninety-eight and a half pounds.

October 18.—Weight one hundred and ten pounds.

October 30.—Weight one hundred and seventeen and a half pounds.

The patient's gain is thus fifty-five pounds in sixty-nine days, and her weight is nearly three times what it was a year ago. We sincerely trust that, since her body has been raised to such a high plane of nourishment, her mind and brain will preserve their normal powers, and forbid in the future any such hysterical demonstrations as we have seen in this remarkable case.

FRACTURE OF THE SKULL BY CONTRE-COUP: IS IT POSSIBLE?[1]

BY J. E. THOMPSON, M.B., B.S. LOND., F.R.C.S. ENG.,

Professor of Surgery, University of Texas.

THE object of this paper is to investigate this important question and to place it in its true scientific position. For a fracture to occur by contre-coup the bone must be broken not at the point which receives the blow, but at a point directly opposite. Thus, considering the skull as a sphere, a blow received on one pole would produce a fracture at the opposite pole. A blow received on the occipital region would produce a fracture of the opposite pole. A blow received on the occipital region would produce a fracture of the frontal region. Similarly, a blow received on the parietal region would produce a fracture on the parietal region directly opposite the point struck. Now, it is to this interpretation, and this alone, that I allow the expression of fracture by contre-coup. If the skull consisted of a

---

[1] An address delivered before the Galveston Medical Society.

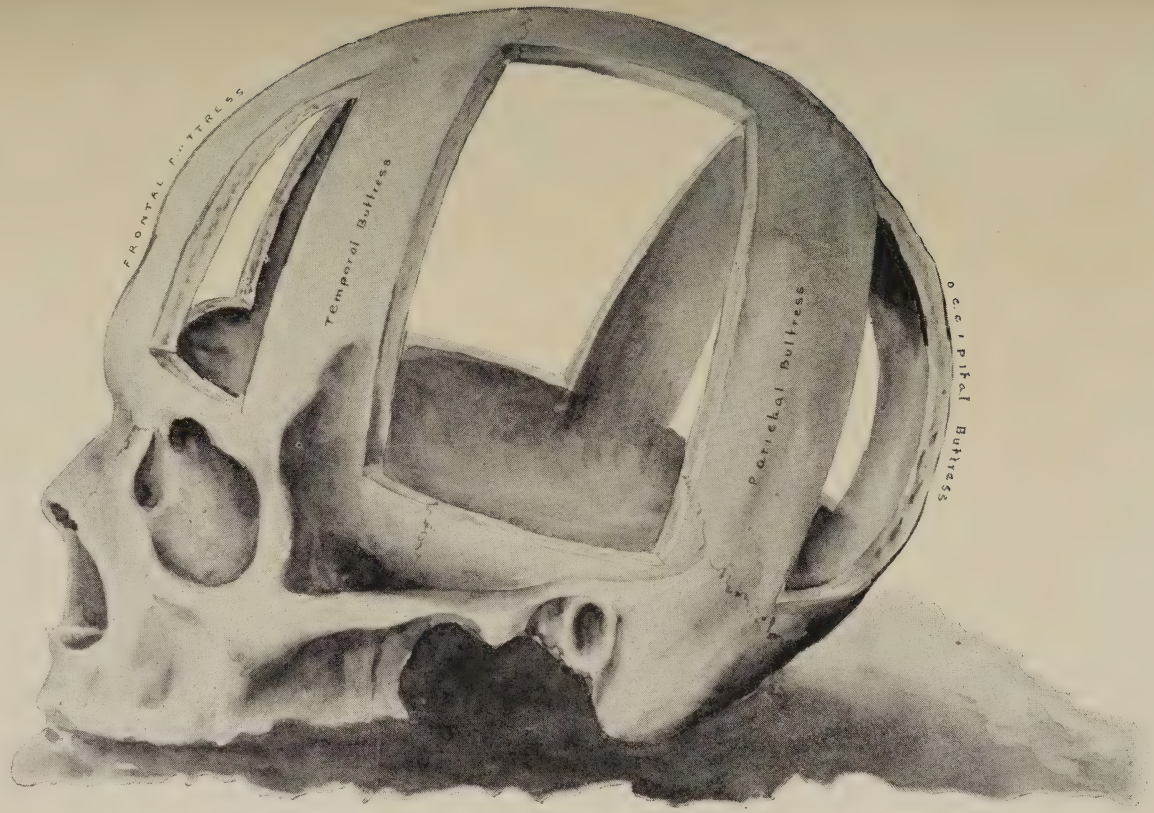


FIG. 1.—Preparation of skull, showing buttresses of resistance. Drawn from a specimen in the museum of the University of Texas.

homogeneous elastic mass of bone of even strength and consistence, and if it were subjected to the action of a crushing force, it would undoubtedly behave like any other body of its shape and density,—*i.e.*, it would break at its greatest convexity.

Thus, if the force and counter-force were at the frontal and occipital regions, the line of fracture would be in the temporo-parietal region, where a bulging would necessarily result.

But unfortunately the skull does not conform to any fixed mathematical figure, and, in addition, is composed of a number of bones of varying shapes and densities joined together by connections of varying firmness.

The result of this is that much of the force is spent in stretching the union of the sutures, and, in youth at least, a crushing force is attended by gaping of the sutures rather than a fracture of bones.

The result of Wahl's[1] experience was that a force tending to diminish the longitudinal diameter of the skull was attended with a longitudinal fracture, and a force tending to reduce the transverse diameter with a transverse fracture.

Now, supposing, for the sake of argument, that fracture by contre-coup really does occur, what is the mechanism? It has been ascribed to the sudden impact of brain-substance against the skull-wall. A blow is given to the skull and a certain momentum is given to the brain in the interior. This is suddenly arrested by the concave surface of the skull, and the result is a fracture *of the skull.* To this cause have been ascribed certain fractures of the ethmoid bone following blows on the back of the head.

Without intending to be too critical, I must say that the explanation appears to savor of romance and sensation. What becomes of the brain in this contest? The reporters of these cases do not mention whether there was concomitant cerebral laceration at this pole of the brain or not.

Another theory to account for fracture by contre-coup is that of "amplification of vibrations." Thus, as the result of a shock, the vibrations transmitted to the skull radiate over its surface and come together again at the opposite pole, causing a rupture of its structure at this point. This theory might have some weight if the skull were a perfectly homogeneous sphere, but practically I think it has no foundation in fact.

The usual classification of fractures of the skull is into direct and indirect fractures,—*i.e.*, the bones give way either at the spot actually struck or at a point more or less remote from the seat of injury.

Now, it will be my task to prove that the majority of fractures of the skull are direct, and that in only a few cases can a fracture be said to be indirect. Further, it will be my endeavor to prove that a pure fracture by contre-coup has no real existence.

Such fractures as those caused by thrusts in the orbit piercing the orbital plate of the frontal bone, and similar fractures caused by wounds

[1] Wahl, Volkmann's Sammlung Klinische Vorträge, 1884, S. 228.

of the nasal cavities, producing wounds of the cribriform plate of the ethmoid, can be dismissed at once, as no doubt can be entertained of their direct causation; but it is to fractures in the middle fossa, caused by falls on the chin, and fractures in the posterior fossa, caused by falls from a height, the subject alighting on his feet or knees, that I would confine your attention for a few moments.

Such fractures, although they appear at first sight to be the result of indirect violence, on closer view come under the category of direct fractures, being caused on the one hand by the impact of the condyle of the lower jaw on the temporal bone, and on the other hand by the impact of the spinal column on the occipital condyles.

Jacobson[1] describes a museum specimen in St. George's Hospital, where the left glenoid fossa is broken and the condyle of the lower jaw projects slightly into the cavity of the skull.

Chassaignac[2] mentions a case where the right condyle of the lower jaw was driven into the cavity of the skull by a fall from a height. A cerebral abscess formed, and the man died in six months. In reference to the posterior fossa, fractures may occur from blows on the sinciput, or from falls on the feet, knees, or ischia. In both cases the etiology is the same.

In this variety of fracture the vertebral column, remaining fixed, penetrates the cavity of the skull by its upper end and staves in the foramen magnum with a variable portion of the occipital and sphenoid bones. The fissures often run across the petrous bone, or along the suture between it and the sphenoid. The margin of the foramen magnum usually remains intact, because the condyles abut, not on the margin, but on the jugular processes of the occipital.

This variety of fracture is termed by Marchant[3] "fracture par tassement." Now, this explanation is quite acceptable in the case of an individual who in an upright posture receives on the summit of his head a heavy blow; but will the same theory hold in fractures limited to the base caused by falls on the feet? Certainly! for the skull with its contents is not fixed by its muscles, and impinges from above with its whole weight on the occipito-atloid articulation, while the spinal column reacts from below like a rigid rod, the result being that the occipital ring is forced into the cavity of the skull, and fissures radiate from it in various directions,—some in the posterior fossa, others across the petrous bone into the middle fossa, and others again along the basi-occipital and basi-sphenoid into the ethmoids and orbital processes of the frontal bones.[4]

Félizet compares happily the mechanism of these fractures to that of forcing a hammer-head on its handle. It can be managed equally well

---

[1] Jacobson, Holmes's System of Surgery, vol. i. p. 586.

[2] Chassaignac, Plaies de la tête, p. 188.

[3] Marchant, Traité de Chirurgie, Duplay et Reclus.

[4] See figure by Trélat Marchant, in Duplay et Reclus, tome iii. p. 458.

by striking the hammer-head over the handle directly, or by striking the butt of the handle on the ground.[1]

Under this category will come the cases of Marmy and Hewett,[2] which are quoted by Ashhurst as examples of fractures by contre-coup. Now, in considering the anatomical features of the skull, one finds that the *base* of the skull possesses an extremely irregular surface, and is composed of bone varying remarkably in its density and strength in different regions; whereas, the vault which is supported by the base is more uniformly solid, more even and regular in its outline.

If one examines carefully the structures entering into the formation of the bony arch of the skull, certain parts will be found which have a greater strength and massiveness than others. These parts serve as buttresses to unite vault and base into one solid framework.

One buttress is in front, and is represented by the frontal eminence abutting below on the ethmoid and continued in the middle line of the vertex to the posterior buttress, which passes through the occipital protuberance to the foramen magnum.

The lateral buttresses correspond to the temporal and parietal regions respectively.

The temporal is represented by a bridge of bone running from the vertex to the malar process of the frontal, and then down the great wing of the sphenoid to the basi-sphenoid.

The parietal buttress runs from the vertex through the parietal eminence and mastoid process, and includes the posterior part of the petrous bone, the jugular process, and the occipital condyle.[3]

These buttresses divide the skull almost naturally into three regions,—(1) a frontal region between the frontal and temporal buttresses; (2) a temporal region between the temporal and parietal buttresses; (3) an occipital region between the parietal and occipital buttresses.

The buttresses are rarely fractures, but fissured fractures run with frequency from the vault to the base, parallel to and between the buttresses. The frequency of fractures in the middle fossa is explained by the great distance between the temporal and parietal buttress, and also by the fact that falls on the temple are exceedingly common.

It was in 1844 that Aran[4] first published the results of his observations, wherein he had studied carefully how certain fractures come to be limited to certain regions. Experimenting on the cadaver by projecting

---

[1] Earl and Sir Benj. Brodie, Med.-Chir. Trans., xiv. p. 329; also Mr. Hilton, Lectures on the Cranium, p. 61.

[2] Marmy, loc. cit., Fractures of the Petrous Bone and the Side of the Sella Turcica; Hewett, L'Expérience, Novembre, 1843, Fracture of the Apex of the Petrous Bone and both Posterior Clinoid Processes.

[3] Trélat, Duplay et Reclus, tome iii. p. 461. Also, Félizet, Thèse de Paris, 1873.

[4] Archives gén. de Méd., 1re ser., t. vi. p. 180.

bodies from a height, he found that the part of a skull which first came in contact with the ground gave the key to the direction of the fracture. Similar results were obtained by striking the skull a diffused blow with a heavy hammer.

Aran's views formulated are as follows:

1. The greater majority of indirect fractures (so-called contre-coup) are in reality fractures propagated from the vault to the base (fractures par irradiation).

Aran himself never succeeded in producing a fracture of the base without finding a fracture of the vault at the point struck.

2. The fractures reach the base by the shortest anatomical route, traversing fissures in their course.

In other words, they follow the path of the shortest ray.

3. He established a relation between the region of the skull injured and the seat of the basal fracture.

Thus he found that blows on the frontal region produced fractures of the anterior fossa; blows on the temporal region fractures of the middle fossa, and blows on the occipital region fractures of the posterior fossa.

Although Aran was unable to produce fractures by contre-coup experimentally, he did not deny their existence, but contented himself with saying that they were excessively rare. Far be it from me, in the face of observations by Boyer, Marmy, and Jacobson, to go further and be more dogmatic than Aran.

Boyer,[1] in 1766, described a case of fracture of the ethmoid alone, due to a fall on the perpendicular plate of the frontal. Jacobson[2] describes a museum specimen in St. George's Hospital with the same injury, due to a fall on the frontal bone. There is no complete history to this case, and it dates from 1849. Marmy,[3] in 1848, described a case of fracture of the cribriform plate of the ethmoid, due to a fall on the feet.

This last case is not strictly a fracture by contre-coup. It probably comes in the classes of fractures by cupping and fractures by irradiation. The two former cases seem conclusive, but Jacobson's has no history. The dates of all three—namely, 1766, 1848, and 1849—are at least significant. It is somewhat strange that cases should not have been described since that time. I searched diligently and examined with care all cases of fractured skull which were admitted into the Manchester Royal Infirmary during two years, and during that time it was never my luck to see a fracture by contre-coup, all the fractures being referable to the classes,—(1) direct, (2) fractures by cupping, and (3) fractures by irradiation.

The further literature on the question, particularly treatises by Otto

---

[1] Boyer, Journ. de Méd., Paris, Août, 1766.

[2] Jacobson, Holmes's System of Surgery, vol. i. p. 581.

[3] Marmy, Bull. de la Soc. Anat. de Paris, p. 258, 1848.

Meserer[1] and Hermann Nicolai,[2] does not advance the subject in the slightest degree.

There are, however, certain points which, if carefully followed up, would facilitate the determination of the question. They are, (1) the presence of bruising of and extravasation of blood into the tissues of the scalp, and (2) presence and location of cerebral laceration and hemorrhage.

Bruising of the scalp, with its results, points to the position of the original blow. But here I wish to point out a source of error. A man receives a blow on the back of his head, falls forward, strikes his forehead on the ground, and fractures the frontal bone, the line of fracture running into the anterior fossa. Examination reveals no fracture of the occipital bone under the contused scalp, and the bruising and extravasation under the frontal scalp are perhaps overlooked. Thus the case is erroneously, and for want of a complete examination, put down as a fracture by contre-coup; whereas, the real cause of the fracture was the blow on the forehead received on falling. I remember very well a case of that nature. A man was struck on the *right* temporal region with a carriage-wheel, was thrown down, and struck the curbstone with his left temple. He sustained a fracture of the left middle fossa, the fracture radiating from the seat of injury on the left temple. There were extensive laceration of and extravasation of blood into the *right* temporal lobe. Here I wish to call your attention to this cerebral laceration with hemorrhages which accompanies, in greater or less degree, all severe injuries to the head, and is present always at the pole directly opposite to that which receives the injury. It is always a laceration by contre-coup, and is the best, and, in the absence of a radiating fracture, the only index to the direction of the original blow.

I have here a portion of brain taken from the left temporo-sphenoidal lobe of a sailor who, as a result of a fall, sustained a fracture of the right middle fossa of the skull. On admission there was a wound in the right temporal region, with slight bleeding from the nose. No hemorrhage was noticed from the right ear, no facial paralysis on the right side. He was in a semi-comatose state, but was easily aroused into an actively dangerous condition. Head was drawn strongly to the left side; eyeballs were not deviated, but the left pupil was somewhat dilated. The wound in the right temple was enlarged, but no fracture was found.

A diagnosis of cerebral laceration in the left temporal and temporo-sphenoidal regions was made, and it was distinctly stated that if a fracture existed it would be found on the right side, radiating from the scalp-wound in the right temporal region.

Two days afterwards right facial paralysis appeared, confirming the

---

[1] Otto Meserer, Experimentelle Untersuchungen über Schädelbrücke, München, 1884.

[2] Hermann Nicolai, Experimentelle und Studien über Fracturen des Schädelbeins, Dorpat, 1881.

diagnosis of fractured base. On the third day the patient died. The autopsy revealed a fissured fracture extending from the seat of injury in the right temporal region downward across the root of the zygoma, across the glenoid cavity into the foramen spinosum, and thence into the foramen lacerum anterius. Another fissure ran at an angle from this into the petrous bone and had opened up the aquæductus Fallopii. The tympanic membrane was intact. The facial nerve was not torn, but was compressed with extravasated blood. There was extensive laceration of and hemorrhage into the tip of the left temporo-sphenoidal lobe, and slight laceration of the speech-, face-, and arm-centres of that side.

This case shows the immense importance of Aran's law from a purely diagnostic point of view, and, last but not least, from a medico-legal aspect.

In conclusion, I wish to state that, while not absolutely denying the existence of fracture by contre-coup, I consider the evidence, both clinical and physical, is neither sufficiently weighty nor logical to justify such a term.

PRACTICAL REMARKS ON THE TREATMENT OF COMMON POLYPUS OF THE NOSE.

BY A. MARMADUKE SHEILD, M.B. (CANTAB.), F.R.C.S.,

Assistant Surgeon and Aural Surgeon to Charing Cross Hospital, London.

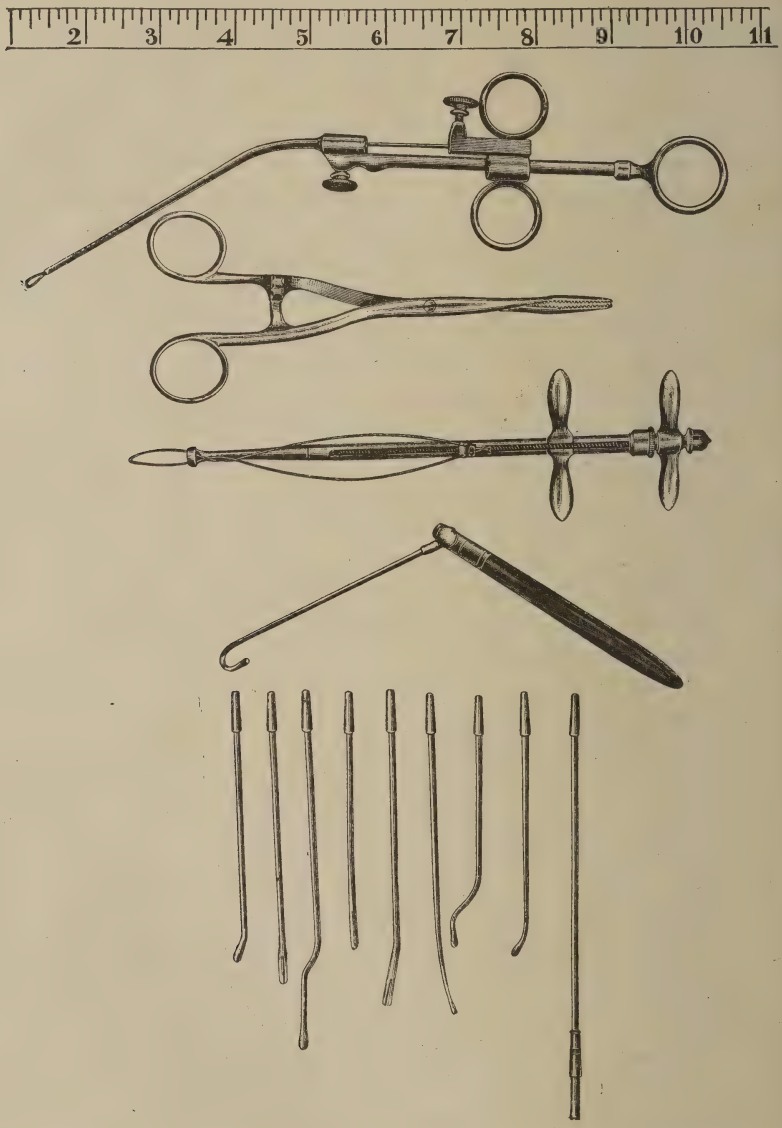
THERE are few affections of the nasal cavities more common and distressing in their symptoms and consequences than the growth of polypi. A full consideration of the pathology, symptoms, and treatment of the various kinds of polypi would occupy considerable space, and I will therefore confine the bulk of my remarks to some practical observations on the symptoms and treatment of the ordinary variety. Mucous or gelatinous polypus is seldom single. Multiplicity is the rule. Growing, as they do in the vast majority of cases, from the mucous membrane over the middle turbinal, or from the outer wall of the nasal fossæ in its immediate vicinity, it is especially important to remark that when small and commencing they may be completely overlooked. From a considerable experience of these cases, I have for some years come to the conclusion that the result of their treatment by ordinary methods is in many cases the reverse of satisfactory. The majority of bad cases that have come before my notice have dolefully related their experience of many previous operations at some of our leading hospitals. I am convinced from this, and also from the difficulty that I have personally encountered in dealing with this troublesome affection, that great care and methodical examination, and especially precision and prolonged perseverance in local treatment, are absolutely essential if an ultimate

cure is to be hoped for. A large number of these growths resemble in their structure and behavior the mucous membrane of the nose. They share its shrinkages and its swellings in dry and damp weather. Microscopically, a considerable proportion of them are formed of connective tissue infiltrated with serum. To say that all gelatinous-looking polypi are true myxomatous tumors is, in my belief, pathologically inaccurate, and it is worthy of remark that there is no other mucous membrane of the body that shows the same tendency towards the development of these curious formations. The confinement of these growths to the neighborhood of the turbinals is also very peculiar. I have read of, but never seen, gelatinous polypi upon the septum, seldom in the naso-pharynx, still less frequently have I had pathological evidence of them in the antrum or accessory sinuses. One cannot but regard the vascular and turgid mucous membrane of these localities as being at fault. The large amount of fluid found in these growths and the presence of cystic dilatations suggests that they are sodden and infiltrated with mucin, the natural transudation of which is impeded, and I cannot doubt that a certain number of them take their origin as hypertrophies rather than true tumor formations of certain localized areas of thickened mucous membrane over the middle turbinals. The important practical deduction may be drawn that the bone is never at fault. I also doubt whether these growths ever recur after complete removal, the so-called recurrence so frequently noticed being rather due to the formation of fresh polypi than renewed growth of an old one. In the majority of these cases careful exploration with a bright light and full dilatation with a Fränkels speculum will detect small gelatinous growths not larger than a pea, but still capable and ready for further development. The anterior extremity of the middle spongy bone is a favorite site for these, and this part of the nasal cavities is frequently not closely enough explored.

In writing to condemn the forceps operation for nasal polypi as frequently performed in this country, I am bound to acknowledge that I express my opinions with diffidence, since they are contrary to the practice of many of the most eminent surgeons of the day. The agony of tearing out the spongy bones without anæsthetics is usually not tolerated, and accordingly full anæsthesia is commonly employed. The patient being placed in a suitable position, "everything" that can be got hold of is removed. The inferior turbinal is frequently extracted, and as this is generally the part least implicated, such mutilation is not needful. Those surgeons who advise removal of the turbinated bones do not seem aware of the high situation of the middle turbinal, which is nearly on a level with the lower margin of the orbit. Again, as the disease is essentially one of the mucous membrane, it seems wrong to remove the bone, which is not the part diseased. In this country certain observers have described necrosis in connection with polypus of the nose. I can only say that after careful examination in the manner detailed by these authors, I have never been able to detect it in cases previously untreated. Where the rough and unskilled

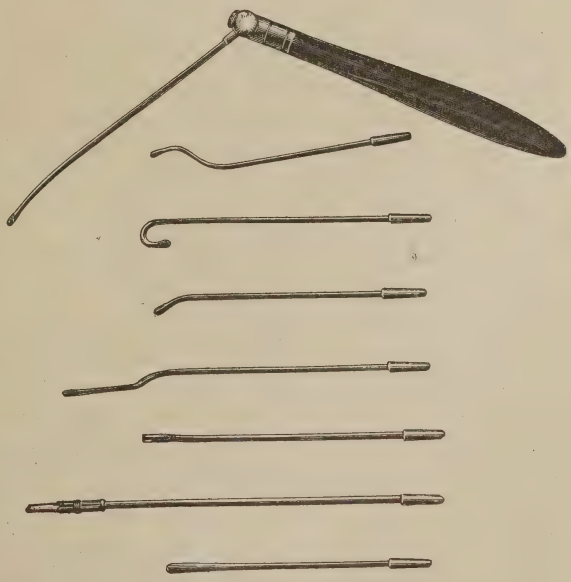
manipulations before described have been adopted, necrosis is sufficiently common as a sequel, and indeed is to be expected.

Among the many indirect evils usually ascribed to gelatinous nasal polypus I have been able to substantiate only a few. That deafness may



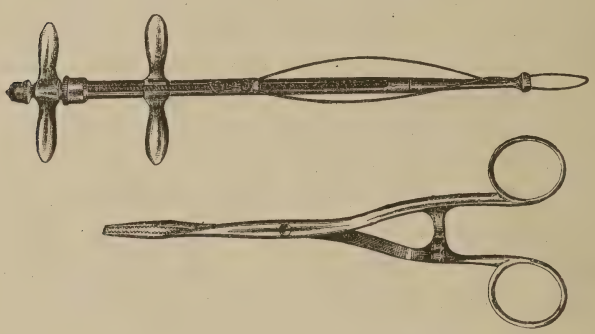
be induced through occlusion of the nose with polypi is certain, yet one finds quite a significant number of cases where the nasal cavities are completely blocked with these growths, and yet the hearing remains absolutely good. This is very remarkable, and I can explain it only by supposing that the deafness of nasal polypus is frequently due to closure of the Eustachian tube by naso-pharyngeal catarrh, the presence of the obstruction

aggravating, perhaps causing, the local malady, and certainly hindering the proper treatment of it. I have found a considerable number of cases of asthma benefited or cured by the removal of nasal polypi, and cases of cardiac dyspnœa and bronchitis are undoubtedly enormously improved by establishing free nasal respiration. I always advise operations upon cases of polypus by the aid of cocaine, a ten-per-cent. solution being brushed over the more obvious growths, and a pledget of wool soaked in the same inserted into the nostril for ten minutes before operating. The exact position and mobility of each growth should be previously made out by palpation with one of the forms of probe shown in the accompanying photograph. These probes, as well as a small cutting-hook, with wool-holders and caustic crayon, are invaluable for these cases. They are made to fit into one handle after my design, by Wright, of Bond Street, London. Obstructing mucus should be mopped away with pledgets of wool, and all these manipulations should be carried out with care and delicacy. Cocaine causes these growths to shrink considerably. It thereby renders their removal more difficult, but at the same time this is counterbalanced by the diminished hemorrhage, and the aid afforded by an intelligent patient. In nervous people a general anæsthetic should be given, preferably chloroform, or the A. C. E. mixture. The mouth should be well opened with a gag, so that if blood gains access to the pharynx it may be readily mopped away. A good light, using the forehead-mirror, is indispensable, and when an anæsthetic is given it is well to persevere until all growths are removed. The oozing of blood often obscures the view, and this should be arrested by firm pressure with a wool tampon. I have used a saturated and hot alcoholic solution of tannin in this way with the best results.



The form of snare made by McDunn Bros. is shown in the photograph. I invariably have at hand three sizes, according to the dimensions of the growths, and it is important also to vary the size of the wire. The loop of cold steel wire, being springy and resistant, can usually be readily manipulated round the growth, its loop tightened, and the polypus cut away. Contrary to the practice usually advised, I have no objection to dragging the growth from its attach-

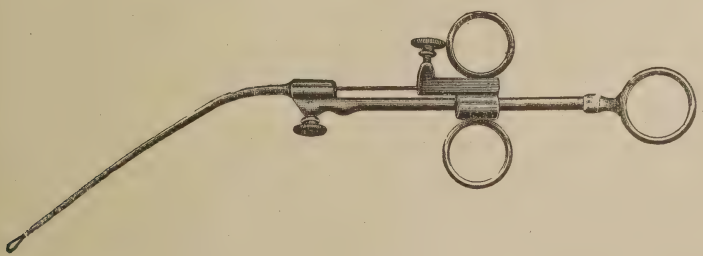
ments. If full cocainization has been adopted these manœuvres are quite painless. One or more full-sized growths being removed, patients frequently prefer to wait for a day or two before proceeding. The surgeon will do well to encourage this, and one of the first principles he must instil into his patients is the importance of completely avoiding all impatience and hurry. It is quite surprising, when one or two large growths have been removed, the number of smaller ones which will show themselves, and these must be painstakingly picked away, one after the other, as they come clearly into view. Small growths are frequently sessile, and it is impossible to snare them. For these alone I use the forceps. I advise slender and delicate forceps, and totally avoid the ordinary polypus forceps of the shops, which are rather fitted to remove a sequestrum from the femur than a friable growth from a highly sensitive cavity. A specimen pair of my forceps are shown in the photograph, and they have a "clip-catch" in the handle which is especially important in the seizing and crushing of these small growths. A sufficient number of sittings should be held to absolutely insure the complete destruction of all small new growths as well as fragments of old ones, and then for a month or six weeks the patient may gently syringe the nose with warm alkaline and antiseptic washes. At the expiration of that time a careful and minute examination should be made, and any fresh growths again treated. I know of no plan so efficacious in treating these small sessile polyps as crushing them and pulling them away with a "catch" forceps. This should be done under a good light, and the surgeon should not be so superficial as to assume that his "tactus eruditus" alone will enable him to distinguish between polypoid tissue and healthy mucous membrane.



The second part of the treatment, that of destroying the tissues where the polypi originated, is now to be entered upon. The galvano-cautery is invaluable for this purpose. With cocaine and a good light, the point is placed upon suspicious areas, and momentarily heated to a white heat, being at the same time gently moved backward and forward. Where tissue is abundant, more extensive charring is advisable. When the resulting sloughs have come away, and the parts have healed, the resulting cicatricial tissue acts most beneficially in reducing by constricting the vascular turgescence and obliterating the mucous glands. In bad cases, where the whole membrane about the middle turbinal is studded with small polypi, more exten-

sive destruction is needful, that subsequent cicatrization may be more complete. For such cases I prefer chromic acid. A large "head" of this substance is fused on one of the probes before described and thoroughly applied; pledgets of cotton-wool being at hand, are well pressed upon the parts the caustic has been applied to, to prevent the deliquescent acid burning the septum. Thorough cocainization or a little chloroform is very essential before this is done. A saturated solution of perchloride of iron in glycerin is also excellent for superficial destruction of the mucous membrane. This is best applied by one of the wool-holders on a small and firm pledget of cotton-wool. In all cauterizations with violently destructive caustics, the surgeon will remember not to do too much at one sitting. Subsequent sloughing and cicatrization will work wonders, and one of the most essential points in the treatment is to allow long intervals to elapse between each application, the patient meanwhile keeping the nose clear with alkaline and antiseptic washes. The period of time over which supervision of a bad case of multiple nasal polypi may extend is almost indefinite if certain cure is to be aimed at. It is easy to obtain the fees and temporary gratitude of a patient by removing a large polypus from his nose; the operation is impressive and the results tangible. When, however, six months later he is as bad as before, or worse, the credit of the surgeon suffers.

Much caution must be exercised in the treatment of those polypi which originate very high in the nasal fossæ, having their apparent origin from the neighborhood of the superior turbinal. In my experience it is not uncommon for growths of this kind to come into sight when larger ones inferiorly situated have been removed. Slender forceps in fine steel-wire snares are best for the treatment of them. I make it a rule never to apply cautery or caustic high up in the nose out of my range of vision. The firmer varieties of nasal polypus are in the majority of cases really sarcoma. I cannot remember to have seen one of these growths composed of pure fibrous tissue. A very strong steel wire slowly tightened cuts away these growths with a minimum of bleeding. The écraseur snare shown in the accom-



panying photograph is especially valuable for these operations, which space forbids further allusion to.

In conclusion, it will be seen that the principles of treatment pleaded for common nasal polypi are largely those that govern really successful and

advantageous surgical procedures in other parts of the body,—namely, great attention to detail and prolonged care and attention in the after-treatment.

NOTE.—I am indebted to Mr. V. A. Corbould for the photographs of these instruments.

DELIRIUM FOLLOWING OPERATIONS ON THE EYE.

BY ENRIQUE LOPEZ, M.D.,

Oculist to the Hospital Mercedes of Havana, Cuba.

FOR some time past cases of delirium have been reported in individuals who have undergone operations for various diseases of the eye. In May, 1890, the question was extensively discussed by the Ophthalmological Society of Paris. The form which has been usually described has been a delirium of exaltation, somewhat similar to that produced by belladonna, and at other times a delirium of persecution.

This delirium has been attributed to very different causes. Grandclement, Galezowski, and Chibret, among others, think that the action of atropine exerts a positive influence in producing it, their opinion being strengthened by the similarity between it and the form brought about by the absorption of that alkaloid. Parinaud, Valude, and Armaignac, as also previously Sichel, consider the cause to be the occlusion of the eyes by the bandage after the operations, and do not grant that any influence is exerted by atropine, which was not used in some cases where iridectomy was performed for glaucoma.[1] Parinaud and Gillet de Grandmont think that the weakness consequent upon the diet is an important factor in bringing about the delirium, the latter citing a remarkable case which was evidently due to this cause.

According to Chibret, alcoholism is of itself sufficient to produce the delirium, and in this opinion many authorities concur.

Gorecki considers it a special form of delirium which, in spite of its analogy, can be well differentiated from the one produced by belladonna. He has seen it in cases where no occlusion of the eyes had been practised after the operation.

Some authorities believe that a condition of nervous excitement—the fear of losing the sight—may produce it in timid persons; but others, and among them Vignes and Ledda, think that the delirium can only occur in cases where there exists a special predisposition, while Chibret goes so far as to say that this particularly corresponds to the insane.

---

[1] Dr. Santos Fernandez, of Havana, attributed the principal rôle in the production of this complication to the dressing and to atropia, but in a recent writing he excludes the latter.

Which, among so many diverse opinions, strikes at the true cause of this delirium? I think that all of them may be occasional causes, more or less direct; each surgeon inclining towards the one most apparent in his own cases.

Atropine is probably of very little importance in the production of the delirium, unless, indeed, it be administered in large quantity. I operated on a woman for cataract who had had accidentally dropped in the eye three days previous so considerable a dose of atropine that it caused the furious delirium corresponding to that poison; and yet, after the operation, there was no delirium, in spite of the fact that she had not yet completely recovered from the effects of the toxic agent. But still more conclusive are the cases of delirium after iridectomy for glaucoma, where that mydriatic is evidently used neither before nor after the operation.

The occlusion of the eyes and the diet, which have been considered to be the principal causes, are, in my opinion, only conditions which favor its appearance; they are not of capital importance in connection with the complication which we are now treating. Otherwise the delirium would be of frequent occurrence, as both conditions are the rule during the first few days following an operation. The delirium is, on the contrary, rare; the authorities who have treated the subject have only cited a few cases.

It is evident that in individuals suffering from alcoholism, the shutting out of the light, the diet, and the excitement consequent upon the operation, may provoke a delirium of persecution.

But the post-operative delirium may be observed in persons who are not alcoholic, as has been asserted by authorized observers who seek the cause in a predisposition to mania, or an easily-excited nervous temperament. In the observations which I can cite of this complication the facts incline me to believe that the delirium is only observed in the demented, with or without alcoholism, and in whom there only exist eccentricities of character which may have passed unperceived by the physician,—the mania, until then latent, breaking out after the operation, favored by circumstances which contribute to excite his imagination, such as the fear of losing the sight, diet, occlusion of light, etc. The access of mania is ordinarily temporary,—it may last a few hours or several days,—but it finally disappears completely. As to its intensity, it varies from vague fears, and slight and hardly appreciable troubles of the intellect, to a furious delirium which may require the use of the strait-jacket. In a moderate attack, the uncovering of the eye, with a view to convince the patient of the success of the operation, may cause it to cease; but, in a more pronounced case, not only this procures no benefit, but the patients will insist in saying that they see nothing, even after having shown them that they could distinguish fingers, could read, etc.

In short, this delirium consequent upon operations is only a form of mania in individuals already mentally alienated, or in others in whom the intellectual trouble was until then in a latent form. A circumstance worthy

of consideration is that I have always observed it in the *old and atheromatous*, which makes me think that this disease of the vascular system plays an important rôle in the production of cerebral troubles, and subsequently of maniacal paroxysms. It is not strange that the cause of the delirium in question should be charged by some to alcoholism, which is a frequent factor in the production of atheromatous degeneration; in cases of this nature it takes the well-known form of delirium of persecution.

In corroboration of the opinions I have just expressed, I shall extract from my cases examples of the three maniacal forms which I have observed:

Case I.—Negro woman, sixty, atheromatous, of fairly good habits, usually silent and taciturn, operated for double cataract, at one sitting; only one drop of the atropine solution was used, thirty hours before the operation, after which an occlusive dressing was applied and liquid diet ordered. During the first and second nights the patient was restless, talked to herself, did not recognize the voice of persons about the house, and would try to get up without any object, in an aimless way; she seemed fearful of something, and, in order to protect herself against imaginary dangers, she wanted to remove the bandage. To prevent this it finally became necessary to use force. During the day she was quiet. She recovered without any complication, except a secondary cataract, which was operated upon a month afterwards, and this time the delirium returned, although less pronounced.

Case II.—White man, seventy, very atheromatous, of a family which has furnished several eccentric and absent-minded members, was operated on for cataract. On the third day it was found necessary to remove the bandage to calm patient's restlessness; there was hernia of the iris, but he could see sufficiently well to read ordinary type. This patient presented for two months a special form of insanity, which consisted in his saying that he was blind, that he could see nothing, and all this only a few minutes after having made him read from a newspaper. He would say that he was being deceived, that he was made to read artificially by putting something in front of his eyes (the lens), but that he would finally become blind. He was sad, talked to himself, was affected with hallucinations, and had conversations with imaginary persons, always on the subject of the failure of the operation.

Case III.—White man, fifty-eight, addicted to drink, but not to excess, atheromatous, somewhat eccentric in his ways, operated on for cataract. During the first three days he used to sing with satisfaction at having recovered his sight. Bandage removed, excellent result. In the night of the third day he received a blow in the eye, and, this accident being repeated during two successive nights, intense inflammation resulted. From that time he became sad, stating that he would never see again. He passed restless nights, in a delirious condition, until the night of the ninth day, when he had a violent paroxysm of delirium of persecution. He imagined that his bed was full of blood, which flowed from his eye; that there were in front of him eight

men who wanted to kill him, and he would try to escape through the wall, which he would strike with his body, in the belief that there was there a door; would not recognize his nurses. All the following day there was the same condition of excitement; he hardly knew me, and would struggle to get away, having attempted to throw himself from the balcony. Prescribed sedatives and sent him home. At the end of a week he was quiet, though not completely recovered. Vision was fairly good as soon as the effects of the traumatism passed away.

In the three forms of delirium the patients were atheromatous, the only circumstance which was common to them. Only one might have been called alcoholic; in another there were antecedents of mental alienation in the family, and the third was known to possess a melancholic disposition. The atheromatous degeneration, while not having an absolute etiological value in these cases, acts upon the cerebral functions through the vascular changes which it produces. In these three patients it was afterwards discovered by detailed questioning of friends that they suffered from intellectual troubles which, due to circumstances accompanying and following the operations, developed into accesses of mania.

If we could suspect the cases in which the delirium might be feared, could we avoid this complication? Never having tried to prevent this accident, I am not in a position to answer the question. But I think that it might be convenient to prescribe the bromide of potassium, associated with the hydrate of chloral, before and after the operation. The sedative effect might be beneficial, while in no way interfering with the progress of the case.

A UNIQUE CASE OF TRAUMATIC NEUROSIS.[1]

BY R. HARVEY REED, M.D. Univ. Pa.,
Mansfield, Ohio,
Professor of the Principles and Practice of Surgery and Clinical Surgery, Ohio Medical University.

On March 20, 1892, I was called to Penn Yan, New York, in consultation for a case which proved to be one of traumatic neurosis. I reached there on March 23, and drove some nine miles in the country to see a farmer, from whom I obtained the following interesting history and report:

History.—Perry A. G., age sixty-three, a farmer by occupation, with the exception of an attack of typhoid fever, from which he suffered some twenty-seven years previous, had never been obliged to call a physician until after an injury he received in a railroad accident on October 14, 1891.

He stated that when the accident occurred he was sitting by himself

[1] A paper read before the Central Ohio Medical Society, at Columbus, Ohio, November 3, 1892.

near the front of the right side of the ladies' car; the first thing he noticed wrong was the rapid jolting of the car, then a "rush" to the left side of the coach, when he became unconscious. The first thing he observed when his consciousness returned was that he was piled up in a corner of the car in the midst of a conglomerate heap, consisting of seats, valises, and passengers, many of whom were either dead or dying.

He found he was injured in the left side, and that it was very difficult for him to get his breath. His first endeavor was to extricate himself from his uncomfortable surroundings, which he succeeded in doing without aid, and walked out of the car (which had been derailed) without assistance. After getting out of the car he was assisted to a hotel near by, where he was seen by a doctor, who gave him a superficial examination, and who congratulated him on having his "pins" left so he could walk, and advised him to return to his home, some three hundred miles distant, as soon as possible.

Nine hours after the accident he boarded a train and started for his home. He stated, however, that before leaving the scene of the accident he would first get sick and think he was going to vomit, and would then have a chill and break out in a profuse perspiration. This continued for several hours after the accident, the nausea, chills, and perspiration alternating quite regularly with each other.

After arriving home and being dressed by his family physician, he found that he was bruised over the point of the left shoulder, along the left side, including the outer aspect of the left arm and leg, all of which he stated were "black and blue" for days after the accident, but that outside of that he did not know that he was injured at all, excepting a few scratches on the face and forehead, beyond the fracture of two or three ribs on the left side, which he said were not dressed until he reached home, when they were dressed by his family physician.

At the time of my visit some five months later, he told me that he never had any difficulty about getting drowsy at his usual bedtime, and after retiring would go to sleep; but he complained that a few hours later he would awaken with what he described as a "terrible nightmare," and find himself wet with perspiration and suffering from fright, which he attributed to some "horrible dream" regarding some "terrible disaster" of some kind from which he would imagine he could not escape.

He said, however, that his appetite was good, his bowels were regular, that he had no trouble with his urine, had no pain in the region of the stomach, and that he had not vomited since the accident. In fact, he said he did not suffer from any pain at this time, although he had lost from fifteen to twenty pounds in weight.

OBJECTIVE AND SUBJECTIVE SYMPTOMS.

I found him with a pulse of 90, temperature 98½°, tongue furred with a white coat, which had the appearance of what is often termed "water-

soaked." Provisional callus was distinctly discernible near the angle of the fourth rib, less distinctly marked near the angle of the fifth rib, and still more feebly appreciable at the angle of the sixth rib.

Whilst he complained of tenderness over each of these points, he complained more of pain on movement of the left arm, which, owing to this, prevented him from using it with the same freedom he did the right. On pressure over the point of the left shoulder, corresponding to the acromion process, and also at another point corresponding to the coracoid process, he complained of excruciating pain. In addition to this he complained of pain, on pressure, running down the course of the superficial nerves of the arm to the ends of the fingers.

I stripped him naked prior to this examination, and examined his back carefully, but found nothing abnormal. He said he never had a pain in his back, and had none at this time at any point along the vertebral column, and that the only soreness he had was in the left shoulder and arm, left side and left leg, any one of which, on pressure with the finger, would give what he called "shots" of pain extending through the limb to its extremity.

On examining the heart, I found the sounds normal and the rhythm regular, although the heart's action was from twelve to fourteen beats to the minute too fast. I examined his entire body carefully for any lesions or indications of abnormal conditions, with negative results, excepting as hereinafter described.

I discovered, however, what to my mind was the unquestionable results of a terrible fright, which was demonstrated by the fact that his toe- and finger-nails, together with his hair and beard, had all died at the time of the accident, and were being replaced by a new growth. I do not mean by this that the old nails and hair had died and dropped off *en masse*, but there was every evidence necessary to convince me that they had all died at the same time, and evidently from the same cause, and were being replaced by new nails and new hair. The former had grown out on each toe and finger about one-third of the ordinary nail area (which can be better understood by examining the accompanying cuts). The line of demarcation between the dead and the living nails was so regular on each toe and finger, and so very distinct, and the distance the new nail had grown compared so favorably with the time that had expired since the accident, that no other conclusion was left for me to arrive at than that this disturbance of the nutrition of the hair and nails occurred at the time of the accident, and was the direct result of the terrible fright caused by the wreck.

The hair and the beard had grown out so that, with the exception of the color, it resembled very much a person who had had his hair and whiskers dyed, destroying their vitality, but which had since grown out, showing a crop of new hair next the skin tipped with old dead hair that had been destroyed by the coloring material used.

I secured a specinen of the urine, which, with the exception of a high specific gravity, revealed nothing abnormal.

In having the gentleman walk over the floor to and fro, I observed that he struck a sort of halting gait. In other words, he seemed afraid to step out free and easy. I inquired why he walked in this peculiar way, and he replied that he was not afraid of falling, but that he was afraid if he stepped out full and free it would cause him pain in his left leg, and consequently he walked in a halting fashion as a safeguard against giving himself unnecessary pain.

I regret, however, that just prior to my visit there had been a remarkable snow-storm in that region, so that in driving from Penn Yan to this gentleman's home, some nine miles distant, we were obliged to take to the fields in many places in order to get around the snow-drifts, which were from two to twenty feet high, and, as we were not expecting to make a discovery of this kind, we did not go prepared with a kodak, and consequently did not get a photograph of this interesting case, but I have endeavored to have an artist present the existing conditions, as I saw them, as nearly correct as possible, although not quite so satisfactory as a photograph. (See Figs. 1 and 2.)

Remarks.—The subject of this report is still living, and whilst the dead hair and finger-nails have all been replaced by new ones, yet the man has never regained his former health, and in all probability never will.

After studying the leading features in this interesting case, I could not arrive at any other conclusion than that this unique pathological condition was the consequence of a profound nervous shock received at the time of the accident, resulting in this unusual manifestation, involving the nails and the hair. There is no doubt in my mind that the fright affected the nerves to such an extent as to temporarily cut off the nourishment of the hair and nails and thus cause their death. Yet the shock was not sufficiently grave to permanently destroy the trophic centres, and consequently the nerves rallied from their suspended animation and resumed their physiological functions.

I cannot satisfy myself that the physical injuries received in this accident, which only amounted to the fracture of three ribs and the bruising of the muscles and nerves of the left side, are sufficient grounds on which to base a theory for the symmetrical death of the hair and nails of the entire body.

Every surgeon who has had an extended experience in emergency cases can point to scores of injuries much more serious to the general structures of the body than this one was without the least injury to the nails or the hair.

It is true we frequently have the nails dying and being replaced with new nails after severe injuries, which has been followed by destructive inflammation, similar to that resulting from a felon, but these are every-day occurrences, and are easily accounted for by the localized temporary arrest of nutrition. But in this case the symmetrical death not only of the nails on the hands and feet occurred, but also of the hair and whiskers,

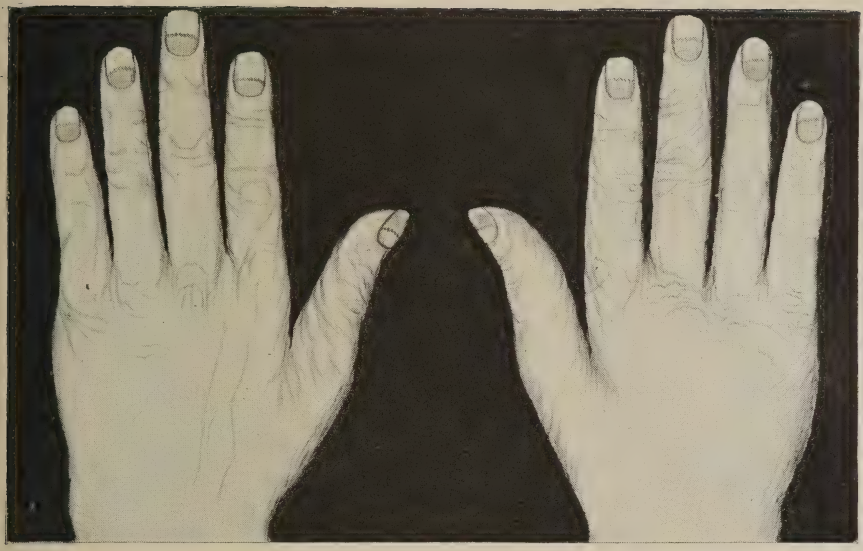


FIG. 1.—Appearance of the hands in a case of traumatic neurosis, showing distinctly the line of demarcation between the dead and living tissues of the nails.

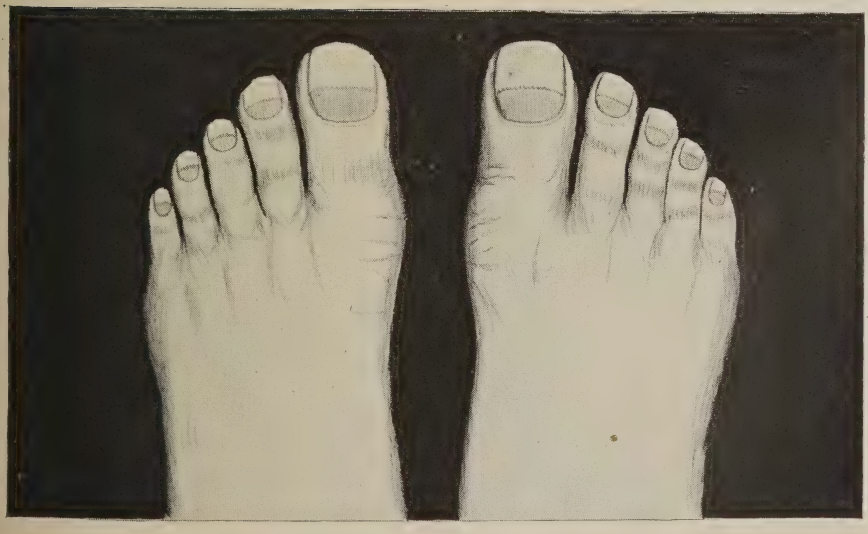


FIG. 2.—Similar appearance of the toe-nails in the same case.

which to my mind is beyond a question of a doubt the result of a profound nervous shock. In other words, this man, instead of being crushed to death, or even injured to any great extent physically, was almost "scared to death," the fright being of such a degree as to interfere not only with the nutrition of the nails and hair, but for months afterwards with his assimilation, which, as a consequence, impaired the general nutrition of the entire economy.

Although rare, it is not a strange occurrence for fright, nervous excitement, or mental anxiety to cause the hair to turn white in a few hours. Landois records a case of this character, in which the hair became gray during a single night, the result of an attack of delirium tremens.

Again, cases are on record where injuries to the brain, such as a fall, sometimes result in paralysis of the hair-follicles, so that after such an injury the hair is lost over nearly the whole of the body. But thus far I have failed to find the record of a single case in which either physical injury or fright caused the death of all the hair on the body, together with all the finger- and toe-nails.

CONCLUSIONS.

From this case we learn:

1. That it is possible to have a fright of sufficient gravity to arrest the functions of the nerves long enough to cause the death not only of the hair, but also of its larger and stronger relatives, the nails.

2. That a profound shock producing such marked results cannot but affect the entire nervous system, and as a consequence, as is demonstrated by this case, produce a well-marked case of marasmus.

3. That this is another clinical demonstration favoring the theory held by many eminent neurologists at the present time, that we *cannot have a permanent lesion of the nervous system without a corresponding physical manifestation.*

TEMPORARY MITRAL INSUFFICIENCY IN ANÆMIC CONDITIONS.[1]

BY C. F. HERSMAN, A.M., M.D.,

Adjunct-Professor of Diseases of the Skin and First Assistant to Clinic for Diseases of the Chest at the Polyclinic, St. Louis, Missouri.

SOME four years ago my attention was called to the fact that certain cases presenting all the signs of an organic valvular lesion of the heart would, under appropriate treatment, entirely recover. I remember to have seen at that time, in hospital practice, several cases presenting marked

[1] Read before the City Hospital Medical Society of St. Louis.

anæmia in which I found what I had been taught were the certain signs of an organic mitral disease. Iron was prescribed in these cases, not with reference to the heart-trouble, but to meet the symptomatic indication of the anæmia. I had very naturally concluded that the mitral lesion was the prime factor, and the anæmia only secondary. What, then, was my surprise to see these signs of organic mitral disease disappear under treatment, as the general condition improved, till the heart, which I had judged hopelessly crippled, was, in the space of a few weeks, restored to the normal. This experience led me to think that the signs which are ordinarily taken as conclusive of an organic lesion are not infallible evidences of that condition. My attention was again called to this subject by reading a report by Dr. Barrs of twenty chlorotic girls in whom the signs of mitral insufficiency were found, which entirely disappeared as the anæmic state was cured. Soon after this there came under my care several cases which seem to me to be examples of the same condition. I will briefly present the notes taken in two of these cases, regretting that they are not more complete, and will then make a few remarks which seem to me applicable.

Case I.—L. D., single, aged eighteen, shop-girl. (Patient came under treatment September 25, 1891.) In the previous spring she noticed that after standing all day her feet would be swollen. This seems to have been the first thing that attracted the notice of the patient, though her sister states that she had noticed that patient was very pale for some weeks before this. Menstruation for some time scanty and several times missed entirely. Bowels constipated; suffers from dyspnœa on slight exertion. Well nourished, but skin of peculiar greenish-yellow hue. Lips almost white. Area of heart's dulness increased. Apex-beat an inch farther to left than normal. Impulse diffuse and heaving. Loud venous hum at base of neck. Loud systolic murmur over pulmonary area. Loud systolic murmur at apex, conveyed to left and heard behind at inferior angle of left scapula. Considerable œdema of feet and legs. Pulse small and irregular. No history of rheumatism. Family history good. Patient was ordered Basham's mixture with infusion of digitalis, and began at once to improve. Soon, as the symptoms of stasis disappeared, digitalis was stopped and tincture of iron given. On October 10 I find this note: Much improved in appearance. Mitral murmur much fainter, as is also bruit in veins of neck. October 15: Pulse regular. Mitral murmur so faint as to be heard with difficulty. Pulmonary murmur faint. November 7: Can detect no murmur at apex, but both pulmonary murmurs and venous hum faintly heard. November 27: No murmurs. Heart seems quite normal.

Case II.—(Notes taken November 15, 1891.) E. L., aged nineteen, single, shop-girl. Has never been quite well, so her mother thinks, since she had scarlet fever nine years ago. During the last year has suffered from dyspnœa and palpitation on effort. Has "fainting-spells." Menses very scanty. Feet and hands cold and seem damper than they formerly were. Suffers from headaches. Heart enlarged, most of the increase in size being

on the right side. Systolic murmur at apex, and heard also faintly near angle of left scapula. Systolic murmur at pulmonary cartilage. Venous hum at base of neck. Urine albuminous to a very slight degree, but no other evidence of any kidney-trouble. Patient is very well nourished. Slight œdema of feet and ankles. She is quite pale, and lips very slightly red. This patient was given iron, and though the improvement was slower than in the first case, the ultimate result was perfectly satisfactory. I saw her last some three months after she first began treatment, and could detect no sign of abnormality in her heart.

It was formerly taught by all systematic writers that a systolic mitral murmur, conveyed to the left, and heard behind at the angle of the scapula, indicated unmistakably an *organic* mitral insufficiency. Thus Fagge[1] taught that "a systolic bruit, audible at the apex only, might be either organic or inorganic; but if the murmur was heard also at the angle of the left scapula, there could be no reasonable doubt as to its organic origin." In Reynolds's "System of Medicine"[2] Fagge quotes Bristowe, Flint, and Andrew as agreeing with him in accepting two criteria for organic mitral disease,—first, the murmur must be audible in the left side of the back, about the inferior angle of the scapula; second, the pulmonary second sound must be intensified. Walshe[3] states that "hæmic murmurs are only exceptionally audible below the nipple, and never, in his experience, perceptible as far as the left apex or outward towards the axilla." He further states that he has never heard in a woman purely chlorotic a murmur having all the characteristics of a mitral regurgitant one. Loomis,[4] speaking of organic disease of the mitral valve, says, "The murmur of mitral insufficiency is heard at or near the inferior angle of the left scapula." He also states that Skoda first called attention to the exaggeration of the pulmonary second sound as a positive and unerring indication of mitral regurgitation.

Strümpell[5] says of anæmic murmurs, "They are heard loudest over the base of the heart, in the neighborhood of the pulmonary valves, and sometimes at the apex." This seems to imply that these murmurs are not propagated beyond the apex. Harris[6] states the peculiarities of the organic mitral regurgitant murmur thus: "A loud, blowing murmur, heard loudest over the situation of the apex-beat, traceable to the left lateral region, and heard at the angle of the scapula behind." Of anæmic murmurs he says,[7] "They are sometimes heard at the apex." Gee[8] speaks of

---

[1] Barrs, Cardiac Bruits of Chlorosis, American Journal of Medical Sciences, October, 1891.

[2] Reynolds's System of Medicine, vol. iv. p. 643.

[3] Diseases of the Heart, p. 86.

[4] Text-Book of Practical Medicine, p. 460.

[5] Text-Book of Medicine, p. 879.

[6] Diseases of the Chest, p. 356.

[7] Loc. cit., p. 110.

[8] Auscultation and Percussion, p. 276.

the murmur of mitral insufficiency as being usually heard at the angle of the left scapula. Guttmann[1] refers to anæmic murmurs as "being sometimes heard at the apex."

These references serve to show that the teaching of many of the best authors has been that a murmur with the first sound heard with greatest intensity at the apex, conveyed to the left, and audible at or near the inferior angle of the scapula, is distinctive of organic mitral disease, while murmurs produced by anæmic conditions and indicating an inorganic, and therefore curable, lesion, are rarely conveyed as far as the apex, and never beyond it. Recently several writers have directly or by implication thrown doubt upon these conclusions. Dr. Kingston Fowler,[2] writing in 1884, says, "Is every patient presenting the signs of mitral regurgitation, a systolic apex murmur conducted to the angle of the scapula, and audible in the vertebral groove, between the sixth and ninth dorsal vertebræ, to be considered the subject of organic mitral disease? My own experience points to an exactly opposite conclusion. I have within the last three months seen at least fifteen cases of advanced chlorotic anæmia, . . . of whose cases I have careful notes, and in whom I have detected a systolic apex murmur which has been distinctly audible, not at the angle of the left scapula only, but in many at the right also; in most of which cases the bruits have disappeared under appropriate treatment. I have long taught that anæmic murmurs obey the same laws as to conduction as those of organic origin, and particularly that the conduction of the systolic apex murmur to the angle of the scapula is no sign of disease [organic?] of the mitral orifice."

The report of Barrs, above referred to, embraces twenty cases in which there was a distinct systolic murmur audible at the base, the apex, and in the back, just those peculiarities which have been thought to characterize the organic mitral murmur, and yet such murmurs, under treatment, have disappeared in an average of three weeks, leaving the heart in an apparently normal condition. Such cases can hardly be supposed to be additional instances of cured organic valvular disease, but rather it seems likely that some of the reported cures of chronic valvular trouble may have been cases of this temporary mitral insufficiency. For that such cases are instances of a true incompetence of the mitral valve brought about by transitory conditions, and persisting for only a limited time, seems very clear.

If we consider briefly the various signs presented by the heart in the two cases which serve as the text for these remarks, we see that the whole picture accords with the supposition of an insufficient mitral valve. The heart is enlarged, as demonstrated by percussion, and its apex-beat is farther to the left than normal, while at the same time it is diffuse. This proves, as clearly as anything can, that the heart is increased in size, and that it is

[1] Hand-Book of Physical Diagnosis, p. 217.

[2] Quoted by Barrs, loc. cit.

putting forth more effort than usual. This enlargement of the heart is of common occurrence in chlorotics; it was remarked by Irvine,[1] who was one of the first in England to study the changes occurring in the heart in chlorosis. In 1877 he stated that "the apex-beat in chlorotics is carried too far outward, is too diffuse, and in this respect corresponds with the general cardiac impulse which is usually 'slapping,' and like that met with in organic disease." According to Eichhorst,[2] "the vigorous action of the heart (in chlorosis) is often visible over several intercostal spaces. The right, rarely the left, heart is often dilated,"—just such a condition of the organ as pertains to an organic incompetency of the mitral valve. So that to make enlargement a cardinal point in differential diagnosis between organic mitral disease and anæmic hearts can no longer be regarded as satisfactory. The murmur was, in the cases before us, clearly blowing in character, not so harsh as one hears in some cases of organic disease, loudest at the apex, conveyed to the left and plainly heard at the inferior angle of the left scapula. These are precisely the characteristics which stamp the murmur found in organic insufficiency, and, if we are logical, we cannot admit a cause for so characteristic a sign in the one case and deny it in the other. It has always been admitted that the peculiarity which marks the murmur produced by leakage through an organically-diseased valve is its conveyance to the left, and especially its presence behind at the angle of the scapula; and when we find this sign occurring with anæmia we cannot deny to it a similar cause. If we admit that the backward flowing stream produces this murmur in chronic valvulitis, we must admit that it is produced by a leaky valve in the anæmic heart also. That this mitral insufficiency does occur in anæmic conditions of the heart is recognized by many authors. Strümpell,[3] in speaking of the so-called hæmic murmur, says, "It is also possibly, in some cases, caused by relative insufficiency resulting, for instance, from dilatation of the heart or imperfect action of the papillary muscle." Taylor[4] also recognizes this condition. He says, "Anæmia may undoubtedly be a cause of mitral regurgitation; the deficient quality of the blood causes malnutrition of the wall of the ventricle; this dilates, the mitral orifice yields, and regurgitation is the result." Harris,[5] when speaking of those anæmic murmurs which may be heard at the apex, thus explains them: "They are probably due to a temporary incompetence of the mitral valve due to a relaxed support of the auriculo-ventricular ring."

Balfour[6] and others would make this lesion of the mitral even more common than we have sought to do, by explaining the pulmonic murmur so

[1] Lancet, June 9, 1877.
[2] Hand-Book of Practical Medicine, vol. iv. p. 16.
[3] Text-Book of Medicine, p. 879.
[4] Hand-Book of Practical Medicine, p. 469.
[5] Diseases of the Chest, p. 110.
[6] Taylor's Hand-Book of the Practice of Medicine, p. 652.

frequently heard in chlorosis by referring it to the mitral valve as its real seat of production. The well-known experiments of Naunyn offer an explanation for the occasional cases of mitral regurgitation in which the point of greatest intensity of the murmur, instead of being at the apex, is at the second left intercostal space, by showing that this is due to an enlargement of the left appendix auriculæ, which thus comes into direct contact with the chest-wall, and so offers favorable conditions for the direct transmission of the murmur. Balfour would thus explain the ordinary anæmic murmur by supposing that there is a dilatation of the mitral orifice with regurgitation, and that the murmur in the second left intercostal space is the bruit of mitral regurgitation heard in the left auricular appendix. However this may be, it is in no wise improbable that this anæmic mitral insufficiency is quite common. The lesions found in the heart warrant such an assumption. In those dead from anæmic conditions fatty degeneration is found in the heart-muscle, in the endocardium, and in the intima of the vessels. Indeed, Perl produced such lesions by inducing an artificial anæmia by repeated venesections. Starting from this pathological basis, it is not difficult to see how a relative insufficiency may occur in one of two ways. The office of the papillary muscles is to prevent a backward bellying of the cusps of the valves under the stress of the blood-current, just as sheets hold a sail in the face of the wind. This is accomplished by an appropriate contraction of the papillary muscle as the ventricle shortens in systole. Now, if a fatty degeneration occurs in these muscles they no longer perform their functions, and with each contraction of the ventricle they are swept backward, and a portion of the blood passes through into the auricle. The same thing may result in another way. If a considerable fatty degeneration occurs in the ventricular walls they lose their elasticity and resisting power, and become dilated by the blood-pressure. Their support is thus removed from the auriculo-ventricular ring, which also spreads, pulling apart the cusps of the valve, and thus allowing regurgitation to occur. Of course, where these two factors are combined, a still higher degree of insufficiency will result. In most of my cases there was marked œdema of the ankles and legs. Œdema is of common occurrence in chlorosis, and has been interpreted by some as indicating a permeable condition of the vessel walls brought about by malnutrition. In the cases reported in this paper the cause of the dropsy does not seem to me to be more obscure or more difficult to explain than that œdema common to mitral insufficiency. Indeed, it owns an identical cause, being the definite result of a temporary mitral regurgitation. And I believe that many cases of this chlorotic œdema depend more directly on the state of the heart than upon the condition of the blood. It is a common experience that an organic lesion of the mitral may exist, followed by dropsy and other results of stasis, and yet no murmur be detected; and I have thought that in some of the anæmic dropsies, where no murmur indicating a relative mitral insufficiency could be detected, perhaps here, too, was a mitral leak with no murmur. It

must be evident to all that in some of these cases it would be most difficult for a time to determine if the anæmia or the heart-lesion be the primary disease. Hypertrophy of the heart cannot be used as a differential point, for we have seen that it is found in anæmic hearts as well as in organic disease; the variation in the anæmic murmur (being present to-day, absent to-morrow) has been regarded as a mark of distinction, but the same thing pertains to some extent to organic lesions, for we often find it necessary to stimulate the heart by exercise to call forth the murmur; intensification of the pulmonary second sound will not distinguish the two conditions, since it is present in both; stasis, with its manifold results, may be found in both affections. So that, if the history of the case does not enlighten us we may have to suspend judgment till the effects of treatment can be seen.

It seems to me, from a study of such cases, that we may justly draw the following conclusions:

First. A murmur, systolic in time, heard with greatest intensity at the apex, conveyed to the left and audible at the inferior angle of the left scapula, does not necessarily indicate an organic mitral insufficiency.

Second. In those cases where the question of differential diagnosis arises there are no signs which will enable us to distinguish, certainly and at once, between an organic mitral insufficiency and the temporary form found in anæmia.

Third. Some cases of organic, by which I intend to imply incurable, mitral insufficiency, in which no history of rheumatism, or other recognized causes of such a condition, can be obtained, may have originated in anæmia, for it is conceivable that the muscular degeneration may reach such a degree that entire recovery is impossible, or a valve may be so altered by the fatty change that its integrity can never be restored.

THE ADVANTAGES PRESENTED BY LONDON TO THE AMERICAN MEDICAL STUDENT.

BY A. O. J. KELLY, M.D.

THE American medical man intending to go abroad to pursue his studies naturally bethinks himself of the place where he may best attain his objects. Each place that offers opportunities for medical instruction probably has some advantage—small or great—over each other place; a few places have many advantages over all the others. London has advantages peculiar to itself, and the American going abroad may very profitably spend some time there. There is spoken the language we speak at home, and to many this would be an almost incalculable advantage.

There are many who feel at liberty to spend some time abroad—a few months only—and who yet know no German, a knowledge of which is most essential to a thorough understanding of the teachings in Germany and Austria. London is *par excellence* the place for such a one to go. Again, there is a class of medical men who know German, and who intend remaining away quite a little while; such men, if they desire more especially to study cases, can most profitably devote some of their time to medical matters in London.

It may be well to state that, as a rule, the institutions for an American graduate not to go to are those hospitals that have a medical school attached. One going to such places as Guy's, St. Thomas's, St. Bartholomew's, London, King's College Hospitals, and the like, is placed on an equal footing with the students. He must take student's courses. These institutions are primarily for the instruction of students, and offer very little facilities for post-graduate work. And it is only natural to suppose that here first attention should be given to the students. A foreigner—a foreign graduate—going there is apt to be thought by the students an intruder, taking from them that which properly belongs to them alone. But that is a minor consideration, if one can obtain something to do.

If one desires to attend a hospital regularly, he cannot do better than confine himself to those enumerated in the prospectus of the London Post-Graduate Course. The most of them are hospitals for the treatment of special diseases; that is, they are more or less limited to the treatment of diseases of certain organs, or of a certain class. By a reference to this prospectus it will be seen that it provides for very little surgery, and that gynæcology and pathology fare but little better. And it may be said that the opportunities for acquiring practical work in surgery, gynæcology, and pathology are quite limited. Another general statement is that London affords any amount of cases for personal observation and examination, but comparatively little instruction.

At the Royal London Ophthalmic Hospital at Moorfields, where there attend over twenty-six thousand new cases annually, the opportunities for studying diseases of the eye, and of practically acquiring dexterity in refraction and in the use of the ophthalmoscope, are most magnificent. As I said, there are any amount of cases, but very little instruction. One may work there from 9 A.M. until about 2 P.M. daily. He will see any number of inflammation cases, may do as much refraction as he chooses, and may use the ophthalmoscope on as many patients as his fancy may incline him. At 10 A.M. the operations, six, eight, ten a day, are performed; and, of course, one may witness these, and being close to the patient can see them very well. From time to time there are appointments to clinical assistantships. These may be entered for by any of the pupils of the hospital who have sufficient knowledge of ophthalmology to properly execute the duties of an assistant, which consists in treating the old cases, the new cases being always seen by the surgeons themselves. The appointments

are held for six months or a year, and the appointee may be re-elected. It would be useless for one to go there to learn the rudiments of ophthalmology, but it is an excellent place for one tolerably well informed to study cases.

At the Hospital for Consumption and Diseases of the Chest, Brompton, the opportunities for studying diseases of the chest are likewise very fine. Here there attend annually over thirteen thousand new cases in the out-patient department. All the patients as they present themselves have their history taken, and are then told to strip to the waist. Their chests are then carefully gone over. When one considers that he may examine the chests of as many as twenty or twenty-five new cases a day, and the chests of as many old ones as may be deemed necessary or his inclinations may dictate, he can easily perceive what an opportunity one has there of becoming proficient in the physical diagnosis of the diseases of the chest. But when one sees such a number of cases he frequently feels he should like to have some one to verify his diagnosis or point out his mistakes. Of course, this is done by the attending physician. But some of the cases are so interesting that one desires very much a short explanation or even a lecture; in other words, among the wealth of material he feels that lack of instruction, such a feature of the continental schools. The visiting physicians at Brompton Hospital are most obliging,—much more obliging than others I have met elsewhere,—and are only too glad to explain any knotty points; but when we think that they have to see eighty, a hundred, sometimes more cases in an afternoon—from 12 noon until 4 P.M.,—one can hardly expect them to spend much time demonstrating cases to any one who may happen in the consulting room for hospital practice. Excellent opportunities for study and observation are presented, but to reap the most benefit therefrom he must be prepared, before he goes there, to recognize conditions. A man desiring simply to study cases and perfect himself in the physical diagnosis of diseases of the chest can most profitably spend some time there.

To attend the out-patient department of the National Hospital for the Paralyzed and Epileptic, Queen Square, is really a treat. An all-sufficient commendation for the place is to mention the names of some of the attending physicians. Drs. Gowers, Ferrier, Beevor, and Ormerod; Mr. Victor Horsley operates here; Dr. Hughlings Jackson attends in the wards. Here there attend annually almost four thousand out-patients. Here one sees and may examine six, eight, ten new cases daily. All patients, whether destined to be in- or out-patients, must first be examined in the out-patient department, and it is this that one may attend. A careful history of the case is taken, and a careful examination of the patient made; an examination exclusive of the electrical examination, which, as deemed necessary, is made during the morning. Then, depending upon the interest of the case, remarks at greater or less length are made by one of the four attending physicians, Drs. Gowers, Ferrier, Beevor, or Ormerod, each of whom

attends one day a week at two and a half P.M. Here, besides seeing and examining the cases, one really receives some instruction. And it is most interesting work. I was through the wards of the hospital several times and saw some of the cases on which Mr. Horsley had operated, with splendid results. To one unacquainted with the recent developments of the surgery of the nervous system they would appear but little short of marvellous.

The Hospital for Sick Children, Great Ormond Street, a hospital with a very large out-patient department, twenty thousand new cases attending annually, is a splendid place to study the diseases peculiar to childhood, and is one of the two places—the Royal London Ophthalmic Hospital being the other—where one can work during the morning. My remarks concerning the other hospitals, with a few modifications to suit the difference in the class of cases, will apply with equal force to this hospital, and to others, such as the London Throat Hospital, which has annually ten thousand out-patients, and the Hospital for Diseases of the Skin, Blackfriars, which has six thousand out-patients annually.

I have been alluding only to what is called hospital practice,—the practice in the out-patient departments of the various hospitals. The fee for such work is, as a rule, a guinea a month, though at some hospitals one must take out a ticket for at least three or six mouths, costing from three to five guineas. There are, however, some lectures, one or two a week at each institution, given at these various hospitals, mostly in conjunction with the London Post-Graduate Course. While not extensive, they are nevertheless very good, and one might, with advantage, attend them. To do so one must matriculate for the whole or for part of the London Post-Graduate Course. In gynæcology, pathology, bacteriology, etc., there are courses, meeting, as a rule, once a week. They can hardly be compared to the courses one may obtain on the continent. For surgery one must go to the larger hospitals, and may go regularly, taking student's courses, otherwise he must be satisfied to be a patient observer of all that occurs. He is not allowed to do anything himself. Still, seeing reputed surgeons and their methods are fruitful sources of information.

London is a good place for the English undergraduate. Your correspondent had the pleasure of visiting in the wards of Charing Cross Hospital with Dr. J. Mitchell Bruce when he was giving his ward class instruction to his pupils. The class that day numbered about twenty-five. The first case happened to be one of catarrhal inflammation of the bile-ducts. Dr. Bruce is in the habit of asking whose turn it may be to examine the case. The student then comes forward and, after the history of the case has been read by the resident physician, proceeds to note any general characteristics or objective symptoms of the patient. If he should omit anything, the rest of the students would be expected to point it out. If they fail, Dr. Bruce himself does it. The student then makes a physical examination of the patient. If there is anything particularly characteristic or

noteworthy, a certain number of the rest of the students make an examination. Then follows a discussion between Dr. Bruce and the student in particular, and the rest of the students in general, regarding the case, whether it be functional or organic, acute or chronic, and the like, until a diagnosis by exclusion is arrived at. A plan of treatment is suggested, commented upon, and finally approved by Dr. Bruce, and they pass to another case. The séance lasted about two hours, during which time there were shown the case mentioned; a case of some acute fever under observation only a day; a chronic heart case; a case of chorea; then in passing several cases previously examined, just to note progress.

One of the disadvantages of London, in a medical sense, is the fact that the various hospitals are scattered over such a wide area. Many of them being distant from each other a mile or two, and it requiring a half-hour, sometimes an hour, to cover this distance, much valuable time is hereby lost. Still, I think no one will ever regret a stay in London.

CLINICAL LECTURES.

SPLENOMEGALIA.

BY H. RENDU, M.D.,

Professor (Agrégé) in the Faculty of Medicine and Physician to Necker Hospital, Paris.

GENTLEMEN,—I feel a certain amount of hesitation in speaking to you of this malady, which is still quite undefined, and not as yet fully understood, but I think, however, that it will be useful for you to know something about this diseased condition, and all clinical facts are interesting of themselves.

Our patient is a vigorous man thirty-seven years of age, who is a policeman and therefore exposed to all kinds of weather. He entered the hospital on the 27th of March, and you have all seen him in "Chauffard" ward. When first examined he gave the fullest possible information as to his origin and antecedents. He was born at Chateauroux, Indre (Central France), and I will say at once that he has not had intermittent fever nor is he addicted to drink, both of which facts are important, as you will see later on. His father and mother are alive and in good health, and he has never had any serious illness in childhood. He says that for a month during 1883 he had attacks of vomiting which seemed to be without cause. This is a point to note, as it may help us to explain his present splenic

affection. He has never had syphilis or any other illness except the ones mentioned. Six years ago, however, in 1886, he first noticed that he had a vague sensibility on the left side when he buckled his belt. Then he felt a weight in the abdomen, and on making any sudden effort he had a sharp pain which seemed to him to be deep in the left hypochondrium. Little by little these symptoms seem to have increased, and when he went up-stairs his respiration became quite short and painful, while he had a stitch in the left side. Notwithstanding this he was able to walk and attend to his business, and only in 1888 did he notice a swelling in his left groin, and on feeling it he found it was rather painful. Besides this his abdomen had become considerably enlarged, but the vomiting he had in 1883 was not repeated. There was no fever and the oppression passed off, and since then he has only suffered an occasional attack of pain of a shooting character.

He came to the hospital, complaining of intercostal pain passing down the left side of the chest, and increasing during inspiration. With this he had a dry cough, but no expectoration. On percussion, some flatness was found over the lower third of the left lung, and on auscultation, respiration was found weak, while some subcrepitant râles were heard with pleural crepitation. There was then slight pulmonary congestion as well as pleural, so that it was quite possible to make a false diagnosis of dry pleurisy. But this could not account for the abdominal tumor. On looking at it we saw that the lower ribs were drawn apart and that the left side was like a dome or the back of a horse. The belly was in fact divided into two parts, the left raised up in this peculiar shape, and the right side flat. On palpation with the hand we could feel a tumor that extended from the diaphragm to the crest of the ilium. This tumor was ovoid in form, with its largest diameter vertical in direction. Its consistence was as hard as wood and it was smooth. There was but little sensibility when we examined it; what pain there had been was perhaps owing to some adhesive peritonitis that existed at the time. By means of palpation we were able to differentiate the tumor from the other organs, although the outline was not clear except for that portion lying posteriorly. The tumor seemed to be attached to the kidney, but we could not tell whether it belonged to that organ or not. However, by depressing the abdominal walls in front we were able to feel a smooth, round border that had a partial division near its middle which we considered must be the hilum of the spleen. By percussion we found that the dulness extended from the seventh rib of the left side to the iliac crest, a height of thirty centimetres (twenty-three inches), and it was twenty centimetres in extent to the right, or transversely.

Notwithstanding the enormous size of this tumor, there were but few local signs of trouble. It was to a great extent isolated and did not provoke any peritoneal irritation or cause an exudation, so that there was no ascites nor enlargement of the abdominal veins. There was a slight vari-

cose condition when he came into the hospital which has since gone away, but it was nothing like what we see in cirrhosis. We must add to this that there was nothing in the other organs,—heart, liver, etc. In the presence of these symptoms what is the nature of this tumor? Does it owe its existence to the kidney or to the spleen? You must remember that it is quite easy to confound the kidney with the spleen. The malignant tumors of the kidney, such as sarcoma, may be indolent, and give only a few vague signs of their presence. I saw such a case with Professor Guyon, and studied it for two years. There are, however, some physical signs which allow us to say whether it is the kidney or the spleen that is at fault. In the case of the kidney, the direction of the tumor is more vertical and it is deeper seated. We have to depress the abdomen more to get at it, and it is behind the intestines. Finally, it is much less mobile than the splenic tumors, while the lateral mobility which is so pronounced in our patient does not exist at all in kidney tumors; so that it is quite certain that this is a tumor of the spleen. Let us now study the lesion: its considerable volume can only be caused by a tumor or by a simple hypertrophy.

Tumors of the spleen are very rare. Grasset published in 1874 a case of primitive cancer of the spleen, but I think that it is the only case of the kind. As a rule, it is a secondary disease and has quite a different evolution, while the symptoms are not the same as our case. There is often ascites, œdema of the legs, and a peculiar cachectic condition. The tumor could be a cyst, for hydatic cysts are not rare, and, just as in this case, the general health remains fair, and the spleen increases slowly. But there are congestive symptoms, such as perisplenitis and localized peritonitis. Besides, with all the difficulty of diagnosis, which is considerable, it is still hardly possible to make a mistake as regards cysts of the spleen, for they have a globular form and the spleen itself has not the same shape as in splenomegalia, the tumor being more pointed towards the anterior portion, with a tendency to point or break out as boils and cysts do elsewhere. There is only one difficulty, and that is when the tumor is in a posterior position; even here we can at times get fluctuation, and we can always make a puncture with a hypodermic needle and demonstrate conclusively the presence or absence of liquid. In our patient the sense of resistance is equal all over the tumor, so that we can be reasonably sure, in conjunction with the history, that we have a spleen that is congested and fibrous. I say congested because you have seen that after our slight attempt at local treatment it diminished in volume, and fibrous because the consistence did not change and it is harder than the normal organ.

We must now endeavor to find out the nature and the origin of this splenic sclerosis. It is generally under the influence of some toxic or microbic cause that we have seen these large spleens develop, and the first class that will occur to you are the cases of sclerosis which have given rise to the expression, "little liver, big spleen." But the clinical picture—hepatic cirrhosis—is different. In such cases we would have ascites, engorged

abdominal veins, etc., and the spleen would never get to this size. The etiology is also of importance here, and it confirms our diagnosis to be able to say that this man is not an alcoholic. Next, splenomegalia of a syphilitic order is rather common, for when the organism is impregnated with syphilis the spleen increases in size, but it does not long remain so. There is also the "late syphilis," in which we get an enlarged spleen, but here the liver is large also. In our present case syphilis can be entirely eliminated.

We said that our patient was born at Chateauroux, and we know that that part of France was formerly subjected to ague, but the patient says he has never had intermittent fever, and he is, as you see, clear in complexion, rather red and flushed, and not at all of the earthy-yellow appearance which the people of a malarial district usually present. Then, his general health, as we we have said, is good, and his liver is small.

It only remains now to mention leucocythæmia of a splenic form; but we have, as you know, examined the blood several times with negative results, so this also may be thrown out of our calculation.

So then we come to a diagnosis of an *essential hypertrophy of the spleen, or splenomegalia,*—"*chronic splenitis,*" or "*hypersplenia,*" as Besnier calls it. All these names, I fear, are more useful to conceal our ignorance than to express a real scientific knowledge. The pathological anatomy of splenomegalia has been well studied by Virchow, who describes the first stage of tumefaction as being more or less acute, with a hypergenesis of the splenic pulp. Then a second stage of sclerosis, where there is a proliferation of an interstitial nature, which encircles the pulp and atrophy of this best element of the spleen, follows. Clinically, we cannot justify these two stages, for there are cases of liver disease where the atrophic forms become so at once, or the congestive condition may go on to hypertrophy of the organ. It must be some irritation of the adenoid tissue that is the first cause of the congestion, and this irritation is followed by interstitial proliferation.

In practice, nothing is more obscure than these hypertrophies of the spleen. Most often they are very slow in formation, as in our patient. The functional troubles that are first seen do not enable you to determine the correct cause. I saw a case in a young man of fourteen, who commenced by complaining of poor digestion, and for a few days could not take either liquid or solid food, then for ten or twenty days he could eat anything he liked. Afterwards he was found with a large spleen, from which he finally recovered. Again it will be the lungs that seem at fault. There is a pleuritis or else a pulmonary congestion at the base of the trouble, and here, I think, the enlargement of the spleen is a reflex action. The sub-diaphragmatic region is very rich in reflexes. I can only in this way explain a pulmonary congestion that comes on from a biliary calculus.

Finally, there is the action on the kidneys. I was called in consultation to see a patient who was dyspeptic, who urinated with difficulty, and had at one time hæmaturia, later polyuria, and six months

afterwards an enormous spleen. During the stationary period of this malady it seems to be benign in character. Our man is a good example of this fact, but he was taken afterwards with a new symptom, *vertigo*, so that when he stood up everything seemed to be turning around him.

As to the effects of this malady on the blood, his face will tell you that splenomegalia does not cause anæmia. We made three examinations of his blood. The first showed that there was no leucocythæmia, and gave six million two hundred thousand red globules per millimetre (cubic) of blood, while the mean is, as you know, four millions; on the other hand, there were only six thousand leucocytes or white blood-corpuscles. The other examinations confirmed these figures. This plethora may be due to two causes: either the hypertrophied spleen produces more red globules, or else the destruction of these globules is diminished, or again, it may be that the blood-serum is diminished, and the regular proportion of the constituents of the blood is no longer maintained.

It is difficult for us to judge in the present state of our knowledge in favor of one or the other opinion. Sometimes, even in chlorosis, we find a concentrated blood, and this leads to errors. We know that hæmatopoiesis differs in the fœtus and the adult. In the first, it takes place in the liver, spleen, and bone-marrow, where we find the blood-cells with a nucleus undergo metamorphosis. In proof of this we have the fact that when young animals are bled and examined soon afterwards, these cells are found in great quantity in the liver and spleen. In the adult it would seem that the bone-marrow plays the principal part, as the liver and spleen do not show these cells in excess after bleeding. In a pathological spleen such as this, we may ask ourselves if the fœtal characters do not reappear in such cases; of course, this is only an hypothesis.

In order to see what the effect of splenomegalia is on general nutrition, we examined our patient's urine. The following is the analysis:

Volume	50.7 ounces.
Urea	6 ounces 4 drachms.
Phosphoric acid	39 grains.
Sugar	none.
Albumen	7 grains.
Bilirubin	none.
Biliverdin	none.
Urobilin	a small quantity.

The urine then is about normal except for the small quantity of albumen and urobilin. The fact that this patient is in fair general health only confirms the observations made on those cases where the spleen has been removed without causing any particular alteration in health. As to the nature of this affection, it is not likely that big spleens have any relation to leucocythæmia. They seem to be the result of an essential disease. To determine if splenic hypertrophy was the result of inflammation or infection, M. Triboulet took some of the blood from the spleen and tried to

obtain cultures in meat bouillon. In twenty-four hours he found the white staphylococcus, but this can have nothing to do with such a malady.

The prognosis is very serious. Although the general health may remain good for a long time, the patient will eventually have gastric intolerance; vomiting and cachexia will follow, or else renal lesions and uræmia. The rupture of the spleen has not been noticed, nor any generalization as to the ganglions. The treatment is very simple. I have seen arsenic succeed, and it should be tried. Of course in splenomegalia due to malaria, sulphate of quinia must be given. In the present case there is almost nothing to do except to try hydrotherapy. As to a surgical operation, it is not advisable, as this region is rich in reflex actions, and if the solar plexus is excited, the patient would be lost in an instant. In fact, surgical intervention should only be resorted to in desperate cases of splenomegalia.

REVIEW OF MEDICINE.

MEDICINE.

IN CHARGE OF JUDSON DALAND, M.D.,

Instructor in Clinical Medicine and Lecturer on Physical Diagnosis and Symptomatology in the University of Pennsylvania, Assistant Physician to the University Hospital; Physician to the Philadelphia Hospital and to the Rush Hospital for Consumptives.

ASSISTED BY

JOSEPH P. TUNIS, M.D.,

Philadelphia.

Tuberculous Pericarditis. (*American Journal of the Medical Sciences*, January, 1893, p. 20.)—Dr. William Osler, after summarizing seventeen cases which have come under his observation in Montreal, Philadelphia, and Baltimore, records some interesting remarks upon the etiology, morbid anatomy, clinical history, diagnosis, and treatment of this disease.

Tuberculosis follows hard upon rheumatic fever as a cause of pericarditis. The affection is usually overlooked clinically, and in some cases anatomically. In one thousand autopsies there were two hundred and seventy-five cases with tuberculous lesions, in seven of which the pericardium was involved. In late years attention has been called to the frequency of the occurrence of tubercular pericarditis, and yet the records of such cases in the literature of the subject are not very numerous. It is a disease not limited to any age, and four groups are recognized by Dr. Osler and described at some length. He believes that the diagnosis is extremely uncertain. In *children* with a history of repeated attacks of rheumatism, a bulging præcordium, systolic retraction at the apex, a fixation of the upper

limit of cardiac dulness, and the diastolic rebound speak for an adherent pericardium; and if in such a case there has been no history of rheumatism, and if, on the other hand, there are indications elsewhere of tuberculosis, a probable diagnosis may be made. The clinical features themselves are of no assistance.

As to the treatment, unfortunately we have no medicinal agents at present which have any positive influence in controlling the original inflammation of serous membranes. The ice-bag applied continuously over the præcordium is a measure whose usefulness has been proved. It allays pain when present, and appears to check the tendency to effusion, while under its influence an exudate may be absorbed with rapidity. It is very much to be preferred to blisters or the thermo-cautery. If patients complain of the intensity of the cold, some such apparatus as Leiter's coil may be used, through which water may be allowed to flow continuously at any desired temperature. Paracentesis should be performed when the effusion reaches such an amount that the pulse is irregular and feeble and dyspnœa impending. If necessary, the pericardial sac may be freely incised and drained.

Intestinal Antisepsis in Typhoid Fever. (*Medical Record*, New York, February 25, 1893, p. 230.) By Dr. J. Fulton Purdom.

On the ground that the typhoid bacillus is the active agent in producing the lesions in Peyer's patches, and that these glands undergo a degeneration which is entirely due to the action of the bacillus, the writer believes that this cheesy degeneration is non-suppurative in character until there is engrafted thereon the action of the pus-producing cocci, some of which are always present in the intestinal canal. The products of suppuration and degeneration taken into the circulation through the lymphatics certainly add considerably to the patient's danger on account of the lowered vitality of the phagocytes. The toxine of typhoid fever, being a very diffusible substance, is immediately transmitted through the entire circulation as soon as it is generated by the growth of the bacilli. The nervous centres, being most susceptible to the action of the poisons circulating in the blood, are first affected by this toxine, and through the nervous system every function in the body is disturbed.

By careful clinical observation the writer is fully convinced that salol affects the specific bacilli in a greater degree than any other remedy. He also believes that sulpho-carbolate of zinc has a most favorable influence in limiting the action of the various micro-organisms in the bowel, as manifested by the absence of tympanites, diarrhœa, and the characteristic odor of the stools under its administration. It may be given in doses of from two to five grains every four hours, alternating with the salol as indicated by the abdominal symptoms. It is of great value to the patient to rinse the mouth thoroughly with equal parts of listerine and water (previously boiled) each time before taking anything into the stomach, and a teaspoonful of listerine may be given in water every four to six hours to keep the stomach

in a condition to receive nourishment. A small quantity of alcohol promotes assimilation.

With proper nursing, feeding, and hygienic surroundings the writer expects his typhoid patients under this system of treatment to pass through the disease with the temperature reasonably mild, without delirium, headache, or excessive tympanites, with a moist and comparatively clean tongue, with hardly a probability of hemorrhage, almost certainly without perforation and without troublesome diarrhœa,—in short, with a comparatively mild febrile attack. The duration of the disease being shorter, the convalescence is more rapid and complete.

Pneumonic Fever. (*Journal of the American Medical Association*, March 25, 1893.) By Dr. Edward F. Wells.

In a scientific article, enriched by one hundred and seventy references to the literature of the subject, the writer discusses the symptomatology of this disease at some length. From the time of Hippocrates the peculiar characteristics of the pulse in pneumonia have been observed. In some cases, especially those pursuing a lingering course, the heart becomes weak and irregular in its action. An accelerated, weak, irregular, and intermittent pulse often indicates inflammatory disease of the heart, whilst a slow and irregular one may arise from cerebral complications. Of whatever nature it may prove to be, an irregular pulse should always excite grave apprehensions. During convalescence the pulse may be for a time intermittent, but this, in the absence of other indications of danger, need cause no alarm. The force of the cardiac contractions depends very much upon the volume and character of the circulating fluid. Contrary to what one might naturally expect to be the case, they are more forcible in anæmic and weakly patients than in the plethoric and strong. In such cases also the action of the heart is apt to be tumultuous, stormy, and irregular. This need occasion but little anxiety, although such patients are often greatly alarmed at their increased cardiac action.

There are some changes in the composition of the blood which are of much importance. It is constantly in a condition known as hyperinosis, and contains more fibrin or fibrin-forming material than in the normal state. The proportion of fibrin, which in health is from two to three parts per thousand, increases in pneumonia to from four to ten parts per thousand. Epistaxis the writer has often seen produce relief for headache, restlessness, anxiety, and delirium, and while some writers regard it as a critical symptom, it has often proved of great benefit. Pericarditis is not an infrequent complication, and is found post-mortem in a larger proportion of cases than our clinical histories would lead us to expect. Endocarditis, as a complication, is most apt to appear during the second stage and is very dangerous. The inflammation may be of limited extent, or it may involve the whole surface of the membrane, and the inflammatory action may penetrate so deeply as to cause abscess and ulceration.

THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,
Professor of Therapeutics, McGill University, Montreal, Canada.
ASSISTED BY
D. I. EVANS, M.D.

A Study of the Comparative Actions of Antipyrin, Phenacetin, and Phenocoll on the Circulation and Heat Phenomena. By David Cerna, M.D., and William S. Carter, M.D., University of Pennsylvania.

In an interesting paper the authors give the results of careful research on the action of these drugs by experimentation on dogs. They first investigated the effect on the circulation, and their conclusions are stated as follows:

1. Antipyrin, in small and moderate amounts, produces a rise in arterial pressure, owing to its stimulating action upon the heart; but, in large or toxic doses, the blood-pressure is lowered, owing to a depressant action upon the cardiac organ. The primary increase in the pulse-rate is due to paralysis of the cardio-inhibitory centres; the secondary decrease is cardiac in origin, and due to the depressant effect on the heart itself. Antipyrin in excessive doses only changes the hæmoglobin into methæmoglobin. It does not appear to influence the vaso-motor system.

2. Phenacetin, in small and moderate doses, causes a rise in arterial pressure by directly increasing the force of the heart's action, assisted also by a stimulating influence exercised on the vaso-motor system. The pulse-rate is increased chiefly by cardiac stimulation, possibly, also, by the influence of the drug on the cardio-accelerating apparatus. In large quantities, the pulse-rate is reduced primarily by stimulation of the cardio-inhibitory centres, and later by a depressant action on the heart. Death takes place from respiratory failure.

3. Phenocoll, in ordinary amounts, has practically no effect upon the circulation. In large doses, the blood-pressure is diminished. The pulse-rate is first reduced apparently by stimulation of the cardio-inhibitory centres, but afterwards increased by their paralysis. Upon the blood itself phenocoll has no action. Death takes place from failure of respiration.

In their experiments on the action of these drugs on heat phenomena, they studied first their effects on the normal animal, and then on an animal in a state of fever induced by the subcutaneous injection of putrid blood in five-drop doses every hour. In this way a steady flow was obtained.

Their results are tabulated as follows:

1. Antipyrin, phenacetin, and phenocoll all fail to produce any effect on the heat-functions of the normal animal. 2. Antipyrin produces a decided fall of temperature in the first hour after its administration in the fevered animal. This reduction is due to a great increase in heat dissipation, together with a fall in the heat production. 3. Phenacetin produces

its greatest influence three hours after ingestion, and principally upon heat production. 4. Phenocoll causes a very decided fall in temperature within the first hour. This fall is due entirely to lessened heat production.

In conclusion, they regard phenocoll as superior for practical purposes to antipyrin and phenacetin. It is readily soluble, rapidly absorbed, and undoubtedly promptly eleminated. Its power to reduce abnormal high temperatures is very decided, and it does this in therapeutic doses without depressing the circulation.

Notes on the Treatment of Dysmenorrhœa. (*Therapeutic Gazette*, November 15, 1892.) By J. H. Musser, M.D.

The writer urges that, in the great majority of these cases, for their successful treatment broad general views should be taken of the physiological and pathological processes involved, and of the hygienic and therapeutic measures to be adopted. He says the specialist is not successful in its treatment. He thinks that removal of the ovaries and dilatation of the cervical canal are in general very disappointing. Only in dysmenorrhœa associated with dislocation of the uterus by a previous accident, should mechanical means, as pessaries, be used. The same may be said of the rest, and massage and the electrical treatments. Unless the patient has every circumstance in her favor to lead a perfectly rounded hygienic life, a relapse will probably take place. If permanent relief be sought for, the varying general conditions demand varying and suitable treatment. Practically the general state of the system is a disease of which the dysmenorrhœa is but a local expression. In the general treatment the writer is convinced of the necessity of securing,—1. Good muscular development. The muscles of the back and abdomen require particular attention. Light gymnastics, calculated to develop the muscles necessary for the support of the spinal column posteriorly, and the abdominal contents anteriorly, are absolutely essential. Until full muscular strength is restored the muscles should be supported by external means. The so-called abdominal supporters are of service, while due attention must be given to the garments and corsets so that they may not crowd the viscera into the lower abdomen. 2. Any anæmia present must be carefully treated. The medicinal measures are familiar to all, but hygienic and dietetic methods will yield better and more lasting results than drugs. 3. The state of the nervous system and the degree of vascular tension are to be considered. All are familiar with the changed state of the nervous system at the approach of the menstrual period. High arterial tension is an exponent of this condition, and the remedies that relieve it lessen the nervous erethism. Excitement of all kinds must be eschewed: the social excitements of city life, the mental excitement of high-pressure education, and the excitation of too rich and stimulating a dietary. Sometimes indications of a rheumatic or gouty diathesis may afford a special clue for treatment. At the same time the state of digestion and the action of the bowels must be examined into.

The drugs which the writer has found of service in the states indicated are nitro-glycerin, the bromides, and antipyrin. Regarding the use of a tonic, the writer is not positive. In some cases, if the muscles be atonic, the nervous system depressed, it is of service in ascending doses. In others, small continuous doses suffice. In the treatment of the monthly period he recommends antipyrin, three to five grains every half-hour, until the severe pain is relieved, and then every two, three, or four hours. Sometimes it is of advantage to anticipate the pain by administering the drug beforehand. In ovarian dysmenorrhœa, the writer begins the use of the bromide three or four days before the flow, in doses of ten or twenty grains every two, three, or four hours.

Cocaine in the Treatment of Acute Inflammations of the Ear. (*New York Medical Journal*, November 5, 1892.) By Julius Wolfenstein, M.D.

The writer states that in his experience in a large number of cases of *otitis media acuta* in children, the instillation of a few drops of a five-per-cent. hydrochloride of cocaine solution into the external ear promptly relieves the pain, and that under four or five instillations daily for a few days the inflammation entirely subsides. This treatment proves also very successful in the aural complications of scarlatina and diphtheria. The solution should be warmed before instilling into the ear, and should be retained by a small pledget of cotton.

Trional. (*Berliner Klin. Wochenschrift*, October 17, 1892; *British Medical Journal*, November 5, 1892.)

Dr. Boettiger has used trional in seventy-five cases in Professor Hitzig's clinic. In general it was given in a single evening dose of from one to two grammes. It did not interfere with any systematic treatment the patient was undergoing. In simple sleeplessness, occurring in functional or organic nervous disease, uninterrupted and generally sound sleep occurred in from fifteen to forty-five minutes. In only one case was any giddiness, or other ill effect, noted on the following day. In some cases it was used every evening for some weeks without losing its effect. In sleeplessness associated with pain, the results were not so good, and in sleeplessness with mental excitement, the results were variable. It acted as promptly and efficiently by the rectum as when given by the mouth. The author concludes that trional is an excellent hypnotic and sedative, and without unpleasant results when given in moderate doses. Its action is more marked and more prompt than chloralamide, two grammes of trional corresponding in action to three or four grammes of the latter drug.

NEUROLOGY.

IN CHARGE OF CHARLES W. BURR, M.D.,
Pathologist to the State Asylum for the Insane, Norristown; Visiting Physician to the Home for Incurables; Visiting Physician to St. Joseph's Hospital, Philadelphia, Pa.

Report of a Case of Syringomyelia, with Exhibition of Sections of the Spinal Cord. (*University Med. Mag.*, March, 1893.) By James Hendrie Lloyd, A.M., M.D.

This is one of the few cases in which a diagnosis was made during life. There was progressive muscular atrophy of the spastic type; thermo-anæsthesia in certain areas with analgesia, and in other smaller areas anæsthesia. On the right thigh hyperæsthesia was present. There was marked scoliosis. The right ankle was enlarged and trophic changes were present in the toe-nails. Death was caused by pneumonia. At autopsy a cavity was found extending from the medulla well down into the dorsal cord. A careful description of the minute anatomy is given. The author suggests that there is an analogy, possibly a deep relationship, between this disease and Friedreich's ataxia.

Two Cases of Cerebral Hemiplegia following Diphtheria. (Ueber zwei Fälle von Hemiplegia cerebralis nach Diphtherie. *Neurolog. Centralblatt*, February 15, 1893.) By Dr. P. Seifert.

In both cases the onset of palsy was sudden; the hemiplegia was complete, including the lower face, and was accompanied by aphasia. The author regards the first case as probably embolic. In the second, in which nephritis was present, while the heart was normal, he is compelled to accept cerebral hemorrhage as the cause.

Duboisin. (*Neurolog. Centralblatt*, February 1, 1893, p. 89.) By E. Mendel.

The author recommends duboisin in paralysis agitans, not as a remedy, but as a great palliative. After injection of two or three decimilligrammes of the drug the tremor ceases for a period of from three to five hours. Sleep, too, is much improved by it and muscular rigidity decreased. The remedy can be used safely for a long time, and there is no danger of the formation of a drug-habit.

A Contribution to the Study of the Family Form of Spastic Paraplegia. (*American Journal of the Medical Sciences*, April, 1893, p. 432.) By Dr. Leo Newmark.

In each of the two families studied in this paper several cases of spastic paraplegia have occurred, and in several members of the families the reflexes are markedly increased without evidence of distinct disease. The author believes, on the evidence of his own cases, and on other collated ones, that spastic paraplegia may occur as a family disease, due to a congenital tendency, and appearing either in earliest infancy, during childhood,

or in adult life. It may be assumed that the complications and the difference in the age of onset correspond to variations in the extent and nature of the morbid process.

Hysterical Pyrexia. (*Edinburgh Medical Journal*, August, 1892, p. 106.) By Dr. J. O. Affleck.

The author reports a case in which for some time there was persistent but variable high temperature, with occasional intermissions without discoverable cause and with few of the usual signs of fever. The patient suffered little or none in health, her weight increased, appetite remained good, and the normal amount of urea was excreted. The pulse rarely rose to one hundred, but respiration varied between forty and fifty per minute. During sleep respiration fell to normal. After watching, evidence of hysteria was found. The author concludes, first, that there may exist over a lengthened period cases of daily rise of bodily temperature, very misleading from their closely simulating the symptoms of organic disease, and yet wholly dependent upon disturbed nervous influence (hysteria). Second, That a careful observation of such cases, including regular weighing and frequent urea estimation, will probably bring out the fact that no excessive tissue-waste is in progress. Third, That there will usually be found, on careful observation, other symptoms, or a history, pointing to hysterical neurosis.

Thermic Fever with an Unusual Sequela, Multiple Neuritis. (*University Medical Magazine*, April, 1893, p. 545.) By Dr. John C. Heisler.

The case was as follows: Three days after sunstroke, and while the patient was still confined to bed, a bed-sore appeared over the sacrum. Following this came intense pain in the calves, absence of knee-jerk, and deficiency of motor power. Moderate fever kept up for some time. The patient was not able to walk for two months. There was marked tenderness over the nerve-trunks in the extremities. Later in the progress of the case, there was delayed sensation on both sides, increased knee-jerk, and no marked muscular wasting.

PEDIATRICS.

IN CHARGE OF T. M. ROTCH, M.D.,

Assistant Professor of Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

ASSISTED BY

E. M. BUCKINGHAM, M.D.,

Instructor in Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

Inflammation of the Vermiform Appendix in Children. (*Archives of Gynæcology, Obstetrics, and Pediatrics*, January, 1893. From *Medical Review*.)

This disease is especially common in childhood. Bland Sutton has

demonstrated the anatomical similarity between the vermiform appendix and the tonsil (*New York Medical Journal*). Both are largely composed of adenoid tissue. Inflammation of the appendix, both simple and suppurative, bears a striking resemblance in its anatomical character to simple and suppurative amygdalitis. Sutherland, in the *British Medical Journal*, calls attention to a close relationship between appendicitis and the uric acid diathesis. He has frequently found excessive quantities of uric acid and oxalates in the urine of children with appendicitis. It would be interesting to know if the calculi found in the appendix are the same in character as the concretions found in the tonsillar follicles.

In a recent discussion at the New York Academy of Medicine, Dr. Lewis A. Stimson called attention to the frequency of recurrence, especially in children. It had been his experience that in young subjects the disease frequently occurred without fever, and with little or no local pain, and that suppuration, when it took place, was apt to be diffuse. Dr. Charles McBurney said that general symptoms, especially the pulse and temperature, were apt to be misleading, and that local signs were more important, especially local pain. It is undoubtedly a fact that pus forms earlier in children than in adults. A chill is rare, and the whole course of the disease may be passed through with but a slight rise of temperature. Indications for surgical interference cannot be formulated with certainty.

Micro-Organisms in the Milk of Healthy Lying-in Women. (*Virchow's Archiv*, September, 1892, vol. cxxx. p. 185; *Archives of Gynæcology, Obstetrics, and Pediatrics*, February, 1893, p. 75; *British Medical Journal.*) By Palleske.

Palleske concludes, as the result of research, that micro-organisms are to be found in the milk of perhaps fifty per cent. of healthy women. These germs belong to the cocci, and solely, so far as Palleske has himself determined, to the variety known as staphylococcus pyogenes albus. It is doubtful whether the germ reaches the mammary gland through the blood-current, or enters the ducts from without. It is certain that the staphylococcus may abound in milk fresh from the mammary gland without the simultaneous or consequent occurrence of inflamed breast or general symptoms of fever.

Lymphatic Leukæmia. (Transactions of the New York Academy of Medicine. *Annals of Gynæcology and Pediatry*, January, 1893, p. 250.) By Dr. J. Lewis Smith.

Dr. J. Lewis Smith has reported the case of a girl five years and nine months of age. She had been apparently well nourished and robust until three weeks before death, when oozing of blood from the gums was noticed. She rapidly became weak, and the surface was blanched; the gums were swollen, and a systolic murmur could be heard over the whole cardiac area. The spleen was not enlarged; the tonsils and superficial nodes were some-

what so. The superficial veins of the abdomen and neck were large and prominent. Petechiæ appeared on the upper and lower extremities. The urine was clear, and contained a few blood-cells, but no albumen and no casts. The temperature ranged from 102° to 103°, and upon death reached 107°. She died in collapse.

Autopsy by Dr. W. P. Northrup: Emaciated; purpuric spots, pin-head size, below the elbows and knees. Cervical, axillary, and inguinal lymph-nodes were slightly large. Petechiæ of the pleura and pericardium; a few lobular consolidations; heart-muscle pale and flabby. Right and left lobes of the liver enlarged, extending to within a half-inch of the umbilicus. Spleen soft and dark, but not enlarged; no prominent bodies. Kidneys normal size, white and mottled lines. Mesenteric lymph-nodes enlarged. Peyer's glands swollen.

Blood examination three days before death showed hæmoglobin, fifteen to twenty per cent.; proportion of white cells to red, one to twenty.

Birth of a Child weighing Fourteen Pounds. (*Lancet*, 1892, vol. ii. p. 256; *Archives of Pediatrics*, March, 1893, p. 272.) By Dr. J. B. Harris.

Pregnancy, which was the sixth apparently, extended to three hundred and twenty-five days. The child, a girl, died during birth. The only difficulty was in the extraction of the body, which took considerable time, owing to its immense size. The weight was full fourteen pounds; length, twenty-seven inches; chest measurement, fifteen inches; thigh measurement, nine and one-half inches in circumference; and arm measurement, six inches in circumference.

SURGERY.

IN CHARGE OF B. FARQUHAR CURTIS, M.D.,
Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

Operations upon the Stomach and Intestine at the Heidelberg Clinic. (Ueber die an der Heidelberger chirurgischen Klinik ausgeführten Operationen am Magen und Darm. *Beiträge zur klin. Chirurgie*, 1892, ix. p. 660.) By Professor Czerny and Dr. W. Rindfleisch.

A. *Stomach.*—Czerny reports nineteen cases of resection of the stomach, with seven deaths. Five cases of cancer died from recurrence two to eighteen months later; two similar cases are alive without recurrence, fifteen months and two years after operation. Of two resections for sarcoma (elliptical resections), one is alive two years after operation; the other died in thirteen months, of recurrence. Of the three cases of resection for cicatricial stenosis, two recovered and remained well for four and ten years respectively, while the third died in nine months, of renewed stenosis.

He reports also twenty cases of gastroenterostomy, with eight deaths

(four in collapse), those who survived living from one to twelve months, with the exception of two cases with non-malignant stenosis, who have remained perfectly well one and two years respectively after operation.

Czerny concludes that it is only in the rarest cases that the cancer can be "cured" by operation, but that the mechanical obstruction which it offers can usually be overcome. The diagnosis between cancerous and hyperplastic stenosis of the pylorus is very difficult. Czerny has found the hydrochloric acid test very useful, for in fifteen cases in which he employed it free acid was found only three times, and every one of the three was proved to be a case of non-malignant obstruction; while in the other twelve, all malignant, there was complete absence of acid except in one case, where there was a trace of it. Only in one form of benign obstruction, the hyperplastic stenosis, is acid absent. Dilatation of the stomach may be wanting in cases of great stenosis of the pylorus, especially if the malignant disease has involved the walls of the stomach and made them rigid. Dilatation, however, may be present without stenosis, and in such cases, unless the tumor can be removed, it is better to simply close the abdomen than to do a gastroenterostomy.

As to technique, Czerny uses gauze wipers instead of sponges, because the latter become infected while the stomach is open. The operation should be done so early that the patient may have enough strength to live for eight days upon nutrient enemata, receiving nothing by the mouth. In gastroenterostomy he prefers Von Hacker's method, securing the bowel on the posterior surface of the stomach, in the direction of peristalsis, and makes a large opening, for he has seen an opening three centimetres wide shrink within five months to eight millimetres in diameter,—that is, to nearly one quarter of its original width.

B. *Intestine.*—Czerny reports twenty-nine cases of intestinal resection, with nine deaths, all but four involving the large intestine. Ten cases were for malignant tumors, with five deaths; eleven for tubercular stenosis, with two deaths; four for intussusception, with one death; and four for fæcal fistula, also with one death. But of the malignant tumors, in three cases a resection had to be made of two coils of bowel, ending fatally in two of them; and in the tuberculous cases, also, one required multiple resection, and died. One of the intussusception cases, moreover, was acute, with gangrene of the gut, so that five of these cases might fairly be counted out, leaving five deaths in twenty-four cases. One fatal case of intestinal anastomosis is also reported. Of the five cases of malignant tumor which recovered, one died six months afterwards of recurrence; the others survived ten, eighteen, and twenty-one months, and six years respectively. The technique, as in the stomach cases, consisted in a double row of fine silk interrupted sutures; but food was allowed by the mouth in three days.

The Treatment of Spinal Abscess. (*British Medical Journal*, 1892, ii. p. 1421.) By W. Watson Cheyne, M.B., F.R.C.S.

Cheyne has evacuated the abscess occurring in Pott's disease, scraping its walls, washing the cavity with warm one to ten thousand bichloride of mercury solution, injecting one or two ounces of a ten-per-cent. emulsion of iodoform in glycerin, and then suturing the wound without drainage. In nineteen cases he obtained a cure, although the operation had to be repeated in some. Two had recurrence, and were not treated. Three died; but only one could be charged to the treatment, this case being an infant two years old, which died of unexplained collapse within twenty-four hours.

The Later Results of Laminectomy for Paraplegia due to Angular Curvature. (*British Medical Journal*, 1892, ii. p. 1423.) By W. Arbuthnot Lane, M.S.

Lane reports on the final results of eleven cases in which he did laminectomy for paraplegia occurring in Pott's disease. One case died of shock, and one died six days after the operation of a hemorrhage from a polypus of the rectum. Two cases were only temporarily benefited. One case died of influenza eight months later without return of the paralysis. The rest continued well one year or more after treatment.

Trigger-Finger in a Child of Seventeen Months. (Ein Fall von sogenanntem schnellender Finger bei einem siebzehn Monate alten Knaben. *Wiener klin. Wochenschr.*, 1892, p. 695.) By Dr. Von Genser.

In a boy seventeen months old, Von Genser found that the ring finger of the right hand when bent could not be straightened without some force, the resistance apparently lying in the first inter-phalangeal joint, motion not being painful. The mother noticed it soon after birth, and the condition, therefore, is apparently congenital. He could find only two cases in the literature of the subject at so early an age,—one being in a girl five and a half years old, the other in a three-months-old boy, both being congenital and affecting the middle finger.

Alveolar Abscess; Pyæmia; Excision of Thrombosed Veins; Death. (*Lancet*, 1892, ii. p. 1044.) By W. Arbuthnot Lane, M.S., F.R.C.S.

Lane reports a case of alveolar abscess in which pyæmia developed, and he removed all the thrombosed veins which could be reached, from the junction of the external jugular with the subclavian up to the facial, together with some broken-down glands. The jugular contained purulent material to within half an inch of its lower end. Although the patient died, the case is of interest, as being an attempt to apply elsewhere the method of treatment of veins practised in pyæmia from ear-disease.

Tumors of the Hyoid Bone. (Ueber Geschwülste des Zungenbeines. *Deutsche med. Wochenschr.*, 1892, p. 853.) By J. Spisharny.

Spisharny reports a rare case of chondroma originating from the greater cornu of the hyoid bone, in a man twenty-five years of age, who had

observed the tumor first five years before, although he had had hoarseness of the voice for some years previously. When operated upon, the tumor was the size of a hen's egg. Spisharny could find only one similar case, also a chondroma, reported by Böckel. The operation was difficult in both cases, because of the impossibility of lifting the tumor so as to expose the parts beneath.

Ligature of the Iliac Arteries through the Peritoneum. (*British Medical Journal*, 1892, ii. p. 1163.) By W. Mitchell Banks, M.D., F.R.C.S.

After mentioning the successful cases of Dennis, Clement Lucas, and Sheild, as well as Footner's case, which burst just as he was about to tie the artery by this method (owing to delay due to attempts at compression), Banks relates a successful case of his own. The patient was sixty-two years old, a farm-laborer, who first noticed the aneurism, then the size of a small nut, a few weeks before operation. It rapidly increased to the size of a fist. The external iliac was tied with catgut, drawn just tight enough to stop pulsation in the aneurism. The peritoneum was stitched up over the artery again, so as to leave the ligature extra-peritoneal. A good recovery followed. In certain cases, then, this method is indicated even for the external iliac artery.

GENITO-URINARY SURGERY.

IN CHARGE OF WILLIAM K. OTIS, M.D.,
New York.

Suprapubic Prostatectomy. (*British Medical Journal*, March 11, 1893.) By G. Buckston Browne, M.R.C.S.

Concerning the advisability and indications for the operation, this author has come to the following conclusions, after an elaborate review of the work done by the most prominent operators in this field of surgery:

1. Suprapubic prostatectomy should never be undertaken at the outset of catheter life unless regular catheterism is impossible.

2. The operation should never be undertaken as long as the ordinary catheter life is a tolerable one.

3. If, from any cause, catheter life becomes intolerable, suprapubic cystotomy should be resorted to. By means of this proceeding the bladder can be thoroughly explored, and any stone removed, which in these cases may easily have escaped detection by the more usual methods of examination. The intravesical growth, if it is found to exist, and of this existence we can never be sure until the finger is in the bladder, can be fully examined, and removed if the operator thinks it right to do so. If he deems removal inadvisable, or if there is nothing which can be removed, he can leave the

patient with a suprapubic tube for permanent after-wear, with the certainty that he will have materially improved the condition of the patient.

4. Should the operator decide to remove the prostatic obstruction, there is a very good prospect, but not a certainty, of the power of natural micturition being restored to the patient.

The Treatment of Suppurating Buboes by Injections of Iodoform Ointment. (*Jour. Cut. and Genito-Urinary Diseases*, May, 1893.) By William K. Otis, M.D.

The following method of treatment for suppurating buboes has been used at the Vanderbilt Clinic with marked success:

The skin about the affected area for some eight or ten inches was rendered thoroughly aseptic by scrubbing with green soap, washed with sulphuric ether, and then douched with a solution of mercuric chloride 1–1000. A narrow bistoury was then inserted into the abscess cavity, and the contents gently, but thoroughly, squeezed out. The cavity was irrigated with a solution of mercuric chloride 1–1000, and immediately filled to moderate distention with warm iodoform ointment (ten per cent.), care being taken not to use a sufficient degree of heat to liberate free iodine. The syringe used for introducing the ointment was the ordinary cone-pointed glass clap-syringe. The plunger being removed, the barrel, gently warmed in the flame of an alcohol lamp, was filled with ointment by means of a spatula, and the plunger replaced. On finishing the injection, at the instant of withdrawing the syringe from the wound a compress, wet with cold bichloride solution, was applied, which instantly solidified the ointment at the orifice, preventing the escape of the contents of the abscess cavity. A large compress of dry bichloride gauze was then applied, covered by a protective dressing of cotton, and retained by means of a firm spica. The patient was requested to return at the end of four days. If all was well at this time, the dressing was simply reapplied; but if there were any evidences of inflammatory action, the wound was thoroughly irrigated and cleansed, and the injection repeated.

Of sixteen cases so treated, nine were reported cured in six days, three in twelve days, one in fourteen days, one in twenty-three days, and two deserted during treatment.

The advantages claimed for this procedure are:

1. That it is simple and safe.

2. In suitable cases cure, as a rule, seems to be more rapid than by any other method.

3. That the patient is not prevented from going about during treatment.

4. The first gland being rendered thoroughly aseptic, renders it less likely that other glands in the chain will become affected (?).

5. *It leaves no tell-tale scar.*

6. It in no way interferes with the performance of any subsequent surgical procedure, if such should be deemed advisable.

Tuberculous Cystitis treated by Instillations of Mercuric Chloride. (Cystite tuberculeuse traitée par les instillations de sublimé. *Ann. d. Mal. d'Org. Genito-Urin.*, March, 1893.) By M. Luys.

The method of treating tuberculous cystitis by means of instillations of the bichloride of mercury in solution was instituted some three years ago by Professor Guyon in the Hospital Necker, of Paris. The above article is the history of a case reported by M. Luys (an extern of the hospital), which has been treated by this method since 1891, having been taken sick in the previous year. The symptoms were intense pain on urination and constant hæmaturia. Almost an immediate improvement was observed after the first instillations, but the patient continued to have some blood in the urine and bacilli of Koch, which disappeared completely some four months later. While perhaps we are unable to accept this as an absolute cure, the patient has arrived at a condition which, to him at least, is equivalent to perfect health.

The gravity of his symptoms before the instillations were employed, their prompt amelioration when the situation had apparently become intolerable, seeming to demand an operation, the length of time he has been out of the hospital (since August, 1891), all tend to show the very great value of this procedure, which may fairly be claimed as another of the many successful methods of treatment devised by its distinguished author, M. Guyon.

ORTHOPÆDICS.

IN CHARGE OF REGINALD H. SAYRE, M.D.,
Assistant to the Chair of Orthopædic Surgery, Bellevue Hospital Medical College, New York.

The Treatment of Elongation of the Ligamentum Patellæ. (*The Medical Week*, February 17, 1893.)—At the meeting of the Royal Medical and Chirurgical Society of London Mr. W. J. Walsham described two cases of knee-trouble characterized by elongation of the ligamentum patellæ. The first case occurred in a girl twenty-one years old. She complained of pain and difficulty in walking, and that she was liable to fall suddenly, without warning, from the patella slipping over one or other condyle. The falls were so frequent and unexpected that she was incapacitated for her duties as a housemaid. The patella could be dislocated laterally on either condyle, and with the knee bent at an angle of ninety degrees it could be pushed up on to the front of the condyles of the femur, so that its anterior surface looked upward instead of forward. The elongated ligament was shortened by transplanting the tubercle of the tibia about one inch lower down the shaft. The wound healed by first intention, and when the patient was last seen the knee-joint appeared normal, and the patella could no longer be dislocated laterally or pushed abnormally upward. The second case

was in all respects similar, and was treated in the same manner. He remarked on the fact that he had not found the condition described in surgical text-books, though Dr. Shaffer, of New York, had published (Transactions of American Orthopædic Association, 1891) seven cases of elongation of the patellar ligament with knee-trouble during locomotion. In these cases no operation had been performed, and the results of instrumental treatment had not been satisfactory.

Mr. Rickman Godlee suggested that in all probability the cases usually described as "lateral dislocation of the patella" were due to the elongation of the patellar ligament, which he admitted might be an important, and hitherto unnoticed, factor in the production of this condition.

Mr. Keetley referred to two cases of extremely mobile patella under his care which he thought were very probably associated with a similar elongation of the ligament. The difficulty in locomotion was not very great, but when the patients attempted to kneel down the patella had a tendency to slip to the outer side of the external condyle. In one case in which the patella was of a very peculiar shape, he had endeavored to restore functional use by removing a wedge of bone and shortening the aponeurosis on the inner side. The immediate result had been good, but he had since lost sight of the patient.

Mr. Walsham, in reply, referred to the procedure adopted in a similar case by Mr. Greig Smith. This surgeon had endeavored to effect shortening of the ligament by passing a kangaroo tendon through its whole length and pulling it tight so as to pucker up the ligament. He then secured this puckering by a second suture.

The Forcible Straightening of the Knee by Means of Special Mechanical Appliances. (*Boston Medical and Surgical Journal*, December 1, 1892.) By Joel Goldthwaite, M.D.

The writer describes a modification of the device introduced by Bradford, of Boston, in 1887, for reducing subluxation and flexion at the knee, and dwells particularly on the importance of reducing the subluxation as well as the flexion.

The original apparatus consisted of two stout iron rods extending from a short distance above the condyles of the femur down each side of the leg, being fastened to it by straps, and continued below the foot where they joined. The upper part, extending from the condyles to the patella, was bent at right angles to the lower part, and straps passed across a pad placed in front of the knee to serve as a fulcrum, while by means of a screw a curved padded plate was pressed against the head of the tibia from behind to reduce the subluxation. By alternating the use of the appliance as a lever to correct flexion and as a screw to correct subluxation, the knee is finally brought into a line with the femur.

Dr. Goldthwaite has modified the appliance by placing the screw in front of the tibia instead of behind it, and by attaching it to a strap which passes

behind the leg, the head of the tibia is drawn forward as the screw is reversed.

He reports eight cases of marked angular deformity with more or less complete fibrous ankylosis which have been made straight and in some cases recovered with moderate motion.

Speaking of those cases that are too firmly fixed to be straightened by the hands, and where the choice lies between mechanical means, exsection, osteotomy, or amputation, he says, "The angular deformities of the knee, with fibrous ankylosis, resulting from chronic inflammatory conditions, whether tubercular or otherwise, can be corrected by means of such mechanical appliances as are here described. The results, judging from six cases, are better than can be obtained by other operations. The leg is not mutilated or shortened and the joint recovers with more or less motion. There is no mortality and the constitutional disturbance is slight. The danger of injuring the structures in the popliteal space is slight, because of the anatomical relation of the parts as shown by dissections."

OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF JOHN M. KEATING, M.D., LL.D.,

Colorado Springs, Colorado; Fellow of College of Physicians of Philadelphia; Gynæcologist (Emeritus) to St. Agnes's Hospital, Philadelphia; formerly Visiting Obstetrician to the Philadelphia Hospital (Blockley); Editor "Cyclopædia of the Diseases of Children," etc.

Belladonna in the First Stage of Labor. (*Archives of Gynæcology, Obstetrics, and Pediatrics*, January, 1893.)—When, notwithstanding persistent pains, the os uteri does not dilate sufficiently (especially if the patient be a primipara), Asher recommends the administration every hour, or at shorter intervals, of twenty to thirty drops of the tincture of belladonna (never less than twenty drops). In numerous cases in which he tried this treatment the results were always excellent,—rapid diminution of the pains, energetic dilatation of the os. Belladonna is superior to chloral.—*Rev. Méd.-Chir. des Mal. des Femmes.*

The Use of the Curette in Uterine Surgery. (Read at the meeting of the Vermont State Medical Society, Thursday, October 13, 1892.) By A. Vander Veer, M.D. It was not to be expected that a paper of this kind would cover the subject so completely as a chapter in one of our advanced text-books or a diadectic lecture, yet these, to sum up, were the conditions in which he would recommend the thorough use of the curette in the manner he should presently describe: Prolonged hemorrhage in girlhood, womanhood, adult life, advanced age; hemorrhage from small or large fibroids, and from hydatids; hemorrhage from endometritis fungosa at any time in life; septic conditions following miscarriage or full-term delivery; subinvolution; chronic metritis; acute or chronic endometritis, asso-

ciated with or without laceration of the cervix (many cases of laceration of the cervix require, a short time previous to the operation for repair, a careful curetting); cases of painful menstruation due to cervical stenosis, and where it is determined to wear, after dilatation, an intra-uterine stem pessary; cases of retro- and ante-flexion, causing great enlargement of the body of the uterus. Contra-indications are very few. Much care is necessary, in curetting fibroids, to recognize a thin uterine wall. If pus-tubes are present without doubt, then avoid the curette and do an abdominal section. A double uterus must be recognized, and both cavities carefully examined. These cases are, however, exceedingly rare.

OPHTHALMOLOGY AND OTOLOGY.

IN CHARGE OF J. E. HARPER, A.M., M.D.,
Chicago, Illinois.

The Ophthalmometer as a means of determining Astigmatism.— In the *Annals of Ophthalmology and Otology*, January, 1893, Dr. S. D. Risley, in speaking of the use of this instrument in determining astigmatism, says,—

"In very many cases the astigmatism is quite accurately estimated, both as to the degree and the direction of the principal meridians of corneal curvature; but, alas! in very many others its findings are approximations only in both respects, while in others the astigmatism, if in low degree and especially if 'against the rule,' is entirely overlooked. To those who have been accustomed to accurate refraction work and not content until a visual acuity equal to $\frac{6}{VI}$ has been secured,—and by $\frac{6}{VI}$ I mean not only one letter in this line, but the ability to see even the details of the confusion letters,— will not be contented with approximate manifest corrections even when aided by the findings of the ophthalmometer."

Glycosuria and Epilepsy caused by Astigmatism. — Dr. Beard (*Chicago Medical Recorder*, February, 1893) reports the case of a boy who had several epileptic seizures, and who was suffering from glycosuria. Nothing in the general health of the patient could be found to account for these conditions. Examination of the eyes revealed compound hyperopic astigmatism and esophoria. The astigmatism was corrected, and the glycosuria and epilepsy ceased. Nothing was done for the esophoria.

An Overlooked Indication for Operation in Mastoiditis.—Dr. Boerne Bettman (*Chicago Medical Recorder*, February, 1893), in discussing mastoiditis, calls attention to a symptom too infrequently mentioned in the books. This symptom is a small nipple-shaped bulging of the drum-head,

with perforation at the apex. He considers it an indication for operation in chronic and subacute cases. It was present in five out of ten cases on which he has operated in the last year. In his patients the bulging was below Schrapnell's membrane.

Sodium Tetraboricum Neutrale in Chronic Suppuration of the Middle Ear.—Dr. R. E. Heflebower (*Lancet-Clinic*, January 14, 1893) reports the results of the use of a saturated solution of this preparation in ten cases. He syringes and dries out the ear, drops in the solution till the middle ear and external meatus are filled. Pressure is then made on the tragus, and the fluid is forced thoroughly into the middle ear. If it passes through the Eustachian tube all the better. The superfluous portion of the fluid is allowed to drain away, and the ear is lightly dried with sterilized cotton. The ear is inspected again, and a cotton plug saturated with the solution is pushed well down against the tympanum, care being taken to cover the perforation. In eight of the ten cases reported the discharge was entirely stopped. In the other two cases the discharge was stopped, but the presence of necrosed bone prevented a cure. The shortest time of treatment was four days, the longest twenty-three, the average seventeen.

The unpleasant features noted were: irritation of the external meatus, which was relieved by an oleaginous mixture; dizziness, attributed to extension of disease rather than the effect of the remedy, occurred in two cases; and the disagreeable taste of the solution.

Treatment of the Sequels of Corneal Ulceration.—Dr. G. E. de Schweinitz (*Philadelphia Polyclinic*, March 15, 1893) gives the following summary: In partial staphyloma of the cornea the faithful trial of a pressure bandage and the instillation of eserine, to be succeeded in the event of failure by an optical iridectomy, or possibly an operation for partial staphyloma; in dense leucomas, again, an optical iridectomy, if there is sufficient clear cornea for this purpose, with a thought of tattooing for cosmetic purposes; finally, in nebulous corneas, the faithful trial of massage, after the manner of Pagenstecher, and usually with the aid of the salve which bears his name.

Galvanism for the removal of corneal scars is an old method which has been recently warmly advocated by Alleman and other American surgeons. A suitably-prepared electrode is connected with a battery, the cathode being applied directly to the anæsthetized cornea, and the anode to the soft tissues of the cheek. Usually a current of from one to one and a quarter milliampères gives the best results. The *séance* lasts, at the beginning, for one minute at a time and is gradually increased to three and four minutes. Great care should be taken not to produce too much reaction.

The Effects of Impacted Cerumen in the Auditory Canal.—Dr. N. W. Cady (*Medical and Surgical Reporter*, March 25, 1893) reports the following interesting cases, in all of which impacted cerumen was found, and

its removal was followed by the cessation of symptoms. Case I. applied for treatment for "a spell of biliousness" associated with vertigo. Case II., a musician in a cowboy band, fell from his horse and sought relief from vertigo. Deafness directed attention to the ear in both of these. Case III. was a lady who would awake from sleep in a state of mortal terror and with oppressed respiration. She feared she was losing her mind. In Cases IV. and V. epilepsy was suspected. Intense vertigo was present, and led to an examination of the ear. Case VI. was a little girl who, after playing violently for half an hour, would become faint and have to lie down to avoid falling. Case VII. was a boiler-maker who appeared to be suffering from a combination of melancholia and delirium tremens. The night before examination he was so violent that it required four men to control him. He believed he was becoming insane. This last symptom Dr. Cady regards as almost pathognomonic. A case now under observation is that of a young man who for four months has been suffering from a gradually-increasing right hemiplegia with intense vertigo and a mental condition resembling dementia. The removal of impacted cerumen from both auditory canals relieved the vertigo, but sufficient time has not elapsed to ascertain whether the other symptoms will be improved.

Impacted cerumen makes its presence felt most in damp weather. The wax is hygroscopic and absorbs sufficient moisture to increase its bulk and produce vertigo.

DISEASES OF THE LARYNX, NOSE, AND SURROUNDING STRUCTURES.

IN CHARGE OF J. PAYSON CLARK, M.D.,
Physician to the Throat Department of the Boston Dispensary; Assistant Physician for Diseases of the Throat, Massachusetts General Hospital.

Treatment of Ozæna and Recurrent Polypi of the Nose by Opening and Draining the Antrum of Highmore. (*Revue de Laryngologie, d'Otol.*, etc., November 15, 1892.)—Dr. Robertson states that he has found the mucous membrane of the antrum more or less affected in all cases of ozæna. The contents of the cavity may be fluid pus, or white, thick, caseous lining on the walls. A large opening of the anterior wall, with evacuation of the contents and curetting of the mucous membrane, arrests the ozænatous process.

In the case of recurrent nasal polypi, the mucous membrane of the antrum is affected in the course of the malady, and reacts on the nasal condition, especially on the middle turbinate. In such cases one frequently finds a lacunar affection of the middle turbinate.

In opening the antrum, the writer uses a mallet and chisel. If a large operation is not desired, one can perforate the anterior wall with an ordinary drill, under cocaine. This is preferable to and less painful than perforating

the nasal wall of the sinus. The writer considers it the most simple and practical method for diagnosis.

Spontaneous Cure of Multiple Papilloma of the Larynx after Tracheotomy. (*Journal of American Medical Association*, October 22, 1892.)—Dr. J. A. White reports a case of papilloma in a boy of five. The growths were small at first, but recurred quickly after each operation, growing with greater luxuriance. Great dyspnœa necessitated tracheotomy. Other attempts at removal were followed by the same luxuriant growth. Three years after the first operation, the child was not seen for two or three months, when it was found that the growth had diminished. Now, six years after the first operation, the growth has disappeared from the larynx. The tracheotomy-tube is still worn, on account of some growth on the anterior wall of the trachea. A papilloma also grew from the epiglottis in this case. This is a rare site for papilloma. The case shows that a tracheal canula can be worn indefinitely without impairment of the voice.

Trichloracetic Acid in the Treatment of Ozæna. Adolph Bronner. (*Revue de Laryngol., d'Otol.*, etc., November 15, 1892.)—The writer employs the drug in a watery solution, ten to fifteen parts in one hundred, and applies it to the turbinates and septum two or three times a week for several weeks. A cocaine spray is applied before and after the operation. A small piece of cotton on a silver or aluminium sound is dipped in the solution, then rubbed energetically on all the affected mucous membrane. The region most difficult to treat is often that of the superior turbinate. If the maxillary, ethmoidal, or sphenoidal sinuses are affected, it is necessary to treat them first.

Acute and Chronic Affections of the Sphenoidal Sinuses. (*Deutsche Med. Wochensch.*, November 24, 1892.)—Max Schaeffer has seen nineteen acute and fifty-three chronic cases. Of the acute form, the symptoms are pains in the back and middle of the head, rather high fever, sometimes dizziness, especially on stooping, and a sensation of pressure from behind on one or both eyes, according as the disease is uni- or bilateral. Objectively, the normal slit between the middle turbinate and the septum is obliterated, and there is a swelling of the front wall of the sinus. There is no abundant secretion and no crusts. Pus was found in every case on opening the sinus. Treatment consists in the application of a ten-per-cent. solution of cocaine, then pressure with a sound (guarded with cotton) in the slit between the septum and middle turbinate. A yielding is felt, and the probe enters the sinus by the normal opening. The sinus will be emptied by removing the probe and allowing the patient to blow the nose with the other nostril closed. If the normal opening is not found, a little harder pressure will break through the thin wall of the diseased sinus. The nose is syringed and, if possible, the sinus, with a solution of bichloride of mercury 1–1000, and iodoform powder blown in. It is sometimes best to remove the small

piece of bony plate with forceps, to gain a freer opening. A change to the chronic form may take place if the case is not properly handled, or if there is a chronic affection of the nose or naso-pharynx, or if the patient has scrofula or tuberculosis. Nasal polypi may be a result or a cause of this condition. The subjective symptoms in the chronic form are: excessive purulent secretion or formation of crusts, fœtor, dizziness, supra-orbital neuralgia, localized pain in the middle of the head, feeling of tension or pressure at the root of the nose. Objective symptoms: unusual breadth of the bridge of the nose, redness and thickening, hyperplasia of the mucous membrane of the septum opposite the middle turbinate, slit not generally obliterated.

Nasal Douches and Sprays. (*Medical Record*, January 14, 1893.)—Dr. Jonathan Wright extols the value of cleanliness in the treatment of hypertrophic rhinitis. Swollen turbinated bodies will sometimes shrink down into shape in a wonderful manner after a simple cleansing treatment of the nose. In many cases cleanliness will have to be followed by some surgical procedure, but undoubtedly many operations will be avoided by this treatment. The writer is inclined to think the use of watery solutions in the nose in young children inadvisable, as they are unable to tell when the fluid enters the Eustachian tubes, and are specially prone to have ear-trouble from the use of watery nasal douches.

Following are some of the precautions given for using a nasal spray or douche: Explain to the patient the possible danger to the middle ear, and caution him to desist if he has any pain or discomfort in the ears. The patient must not forcibly blow the nose while compressing the alæ.

Oily sprays coat the mucous membrane, acting as a protection against too rapid evaporation and against dust. They probably lubricate the outlets of the glandular ducts. They are good vehicles for carrying volatile substances into the nose.

A Complementary Sign in the Diagnosis of Empyema of the Antrum by Transparency with the Electric Light. (*Annales de Mal. de L'Oreille*, etc., February, 1893.)—Dr. J. Garel noticed that in putting the electric light into his own mouth with the eyes closed he experienced immediately a sensation of light in both eyes. Experimenting further with patients with empyema of one antrum of Highmore, he found that the perception of light was only in the eye above the unaffected antrum.

Nasal Hydrorrhœa. (*New York Med. Journal*, December 10, 1892.)—Dr. C. E. Bean gives notes of three cases of this rather rare affection. The etiology is masked, aside from those cases produced by traumatism or due to the presence of nasal polypi. The affection has been referred to paralysis of the trifacial nerve, and to myxœdematous degeneration in the antrum [or other sinuses.—Ed.]. It is found only in those of a neurotic temperament.

No line of treatment can be laid down for this disease. Cocaine is in most cases of no benefit, and in some instances positively injurious. Aside from the cases produced by traumatism or polypi, no good result is to be hoped for from local medication. The internal administration of antispasmodics to relieve and control the neurotic condition is advised, and after the acute attack a general tonic treatment with iron, quinine, and strychnine, together with cold baths and massage.

Tubercular Affections of the Larynx. (*Medical Press*, February 1 and 15, 1893.)—Percy Kidd, M.D., states that the record of the Brompton Hospital shows that tubercular disease of the larynx is found in at least fifty per cent. of all patients dying of chronic pulmonary tuberculosis. Probably about twenty per cent. of patients suffering from phthisis manifest signs of tuberculosis of the larynx. The vocal cords and the posterior laryngeal wall, the parts most prone to become affected, are covered with non-ciliated epithelium, and it is here the sputum most usually adheres. The epiglottis is next in the order of frequency to be affected. The ventricular bands are less liable to be affected than any of the above parts. Of one hundred consecutive autopsies in laryngeal tuberculosis, twenty-three showed the disease too wide-spread to be of use for comparison. Of the seventy-seven remaining cases, the vocal cords were affected in fifty-three (sixty-eight per cent.), the posterior wall in forty-seven (sixty-one per cent.), the epiglottis in twenty-one (twenty-seven per cent.), and the ventricular bands in four (five per cent.).

The Medical Treatment of Acute Tonsillitis and Pharyngitis: a Comparative Study based on One Hundred and Sixty-nine Cases. (*Jour. Amer. Med. Assoc.*, December 10, 1892.)—Dr. James E. Newcomb divides these cases into three groups according as treatment was begun on the first or second day of the disease, on the third day, or after the third day. Salol was employed in five-grain doses in mucilaginous suspension. The cases are tabulated and the number of hours given before relief from pain was felt. Thirty-six cases in which salol was given belonged to the first group, and the average number of hours before relief was felt was twelve. In six cases there was no relief. Fifteen cases belonged to the second group. The average number of hours before relief was fourteen; failures, three. Thirty cases were in the third group, with four failures. Average number of hours before relief, eighteen. In no case was any unpleasant effect from salol observed. The urine was always dark, suggesting carboluria. Guaiac was the second remedy tried. Twenty cases were in group one with two failures. Average number of hours before relief, eighteen. There were two failures in the ten cases of the second group, and the average number of hours before relief was twenty-three and one-half. Among the fourteen cases in group three there were four failures. Average number of hours before relief was eleven. Guaiac has the disad-

vantage of being extremely disagreeable to take. Salicylate of sodium was given in five-grain doses in solution every two hours. In fifteen cases in the first group there were two failures. Average number of hours before relief was twenty-four. In group two there were twelve cases (two failures), and average number of hours before relief, seventeen. In group three there were seventeen cases (six failures).

Eighty-one cases (forty-eight per cent.), treated by salol, relief on an average in fourteen and one-third hours.

Forty-four cases (twenty-six per cent.), treated by guaiac, relief on average in seventeen and one-third hours.

Forty-four cases (twenty-six per cent.), treated by salicylate of sodium, relief on average in eighteen and one-half hours.

The writer believes that in many cases a previous rheumatic history is simply a coincidence, as relief was obtained in practically the same number of hours whether there was or was not a previous rheumatic history. Salol, in the majority of cases, will give relief quicker than any other remedy.

Secondary Manifestations in the Acquired Syphilis of Adults. (*Annales des Mal. de l'Oreille*, etc., February, 1893.)—Paul Tissier gives the following results of the study of twenty-five cases of syphilis in women. Nasal lesions occurred seventeen times (sixty-eight per cent.); twelve times unilateral (seventy per cent.); four times bilateral (twenty-nine per cent.); in one case predominating on one side.

In six cases there was erythema, twice diffuse, in three cases more marked in the septum. In all cases (eight) of ulceration this was present on the septum. In two of these cases it existed at the same time in the vestibule, and in one on the inferior turbinate. In two cases adhesions developed between the inferior turbinate and the septum. To summarize: the first stage is erythema; second, erosion (preferably on the septum); third, return *ad integrum*. Adhesions may develop, however, between the lower turbinate and septum when they have been in contact.

Swelling of the inferior turbinates is very frequent. This may be coincidence, as the condition is relatively common; but probably syphilis is a predisposing cause in these cases. Although secondary nasal syphilis in adults usually ends in complete cure, it should not be neglected, as it may be the menace of a grave invasion in the tertiary stage.

Syphilis of the Lingual Tonsil. (*Münch. Med. Wochensch.*, February 7, 1893.)—From a study of seventy-one cases of syphilis, seen during the past year, Dr. Seifert concludes that in the majority of cases of syphilis in which the throat, especially the tonsils, shows lesions, the lingual tonsil takes part in like manner in the process, and syphilitic disease of the lingual tonsil does not belong to the rare affections. The first appearances are redness and swelling, on which later papules develop. In the third stage these papules ulcerate. In the first stage no subjective symptoms point to disease of the lingual tonsil. In the second stage the symptoms are un-

important; while in the third stage the severity of the complaint is quite considerable. After the healing of the papules hyperplasia of the lingual tonsil may remain for a long time.

Cancer of the Tonsil treated by Lactic Acid. (*New York Medical Journal*, December 10, 1892.)—Dr. E. Fletcher Ingals used lactic acid in the case reported in the following manner. At first he applied a sixty-per-cent. solution to the ulcerated portion of the growth every three or four days for three weeks, resulting in the healing of the ulcer. Thickening was then noticed back of the posterior pillar on the same side (the right), which rapidly increased. It was injected with five minims of a twenty-per-cent. solution of lactic acid. For some weeks profuse bleeding followed each injection. The strength of the solution was, in the mean time, gradually increased to sixty per cent. This solution proved too strong, as it caused sloughing. Eight to ten minims of a fifty-per-cent. solution were then injected in one or two places about three times a week, speedily diminishing the size of the indurated mass. The cancer, however, progressed, affecting the base of the tongue and the right side of the pharynx and larynx. The injections always reduced the growth, so that ten months after the first injection it was little worse than when the injections were commenced, except that the cervical glands were slightly affected. The injections were always made deep into the tissues, sometimes causing considerable pain. Usually from six to twelve minims of a solution from thirty-five to fifty per cent. in strength were injected at each sitting, a small amount of cocaine being previously added to the solution when considerable pain was anticipated. Although the treatment was not curative, it suggests the possibility of retarding the growth of cancerous tumors not accessible to the knife.

Acute Infectious Phlegmon of the Pharynx following Follicular Tonsillitis—Death in Seventy-two Hours. (*Medical Record*, March 4, 1893.)—Dr. S. Kohn reports the following interesting case. The patient had acute follicular tonsillitis, his principal complaint being dysphagia. The writer tried a manipulation which he has found invariably to give relief in these cases,—*i.e.*, expression of the contents of the inflamed follicles by pressure on the tonsil with the index finger. In this case no relief resulted. Next morning there was swelling of submental connective tissue extending to the left side of the neck; the tongue was swollen to twice its natural size, and the mucous membrane on the left lower jaw œdematous. There was no dyspnœa. The patient was unable to expel the mucus easily from his throat. The next morning the patient was found dead in his bed. His wife, sleeping in the same room, was unaware of his death. Under the guise of an acute follicular tonsillitis an acute septic infection overwhelmed the nerve-centres and caused death by heart-failure before operative interference was indicated. The number of such cases reported in medical literature is small.

The Etiology of Laryngismus Stridulus. (*Journal of Amer. Med. Association*, January 21, 1893.)—Dr. John O. Roe, after a careful study of the subject and its literature, concludes that in the causation of laryngismus stridulus the following conditions must be present: 1. A chronic irritation of the larynx. 2. An abnormal activity of the laryngeal motor centres in the medulla, rendering them more susceptible to the normal blood-stimulus, and also more sensitive to irritation applied to the peripheral nerve-filaments as a result of irritation of the larynx. 3. An unequal susceptibility of the adductor and abductor muscles to local irritation, and also to normal blood stimulus. The abductors, from their situation, are less subject to local irritation; their motor centre in the brain is less susceptible to normal stimulus, and thus spasm of the abductors is less frequent than spasm of the adductors, and less persistent when it occurs.

DERMATOLOGY.

IN CHARGE OF W. A. HARDAWAY, A.M., M.D.,
Professor of Skin Diseases in the Missouri Medical College, St. Louis.
ASSISTED BY
C. F. HERSMAN, A.M., M.D.,
St. Louis.

Ichthyosis with a Pemphigoid Eruption.—Düring (*Monatshefte für Prakt. Dermat.*), after referring to two cases, one reported by Vidal and the other by Hallopeau, reports a third, which seems to him to fall into the same group. The case which he describes existed in a seven-year-old boy, who was well developed and whose family history showed that there was no predisposition from this source to any disease. The skin on all parts of the body, save the face and penis and scrotum, is more or less involved. On the hairy scalp are observed pale-red cicatricial spots of about a half centimetre in diameter, sometimes isolated and sometimes grouped so as to form a trefoil shape. The border of these spots is of a darker red and sharply defined. Similar lesions are to be observed on the ears, on the neck, on the trunk, and they are especially plentiful upon the abdomen. The arrangement of the spots is such that one cannot speak of a true confluence, but it rather seems that new lesions had developed between the older ones. Where the skin is not affected in the way just mentioned, it is of a dirty yellowish-gray color, as though rather deeply pigmented, and is somewhat thickened and presents a slight scaling; these changes are especially to be noted on the surface of the extremities.

The most interesting condition is found upon the limbs. The skin on the extensor surfaces of the elbows and knees is wrinkled, and presents several cicatricial spots, covered by thin shining integument. On the right knee are three pemphigus-like lesions, which seem to be drying up; on the left knee two similar bullæ exist. A bulla, more recent in appearance,

was noted on the left knee; its contents was clear serum, while the contents of one of the other lesions was hemorrhagic. In the neighborhood of the joints, and especially of the knees, there are miliary nodules, isolated or in groups, resting upon a background of rose-red cicatricial spots. These little bodies are mostly yellowish in color, but some are red. When these are opened a white mass of thin consistence escapes; if the contents be squeezed out, a rather large opening remains in the apex of the lesion. The fingers and toes, and backs of the hands and feet, are covered with a tender red skin, and the father of the child stated that in all these regions blebs had formerly existed. On the left ankle three blebs were found. Numerous nodules like those mentioned exist on the ankles and wrists. The last phalanges of the fingers and toes are mostly somewhat thickened; the index finger, however, is atrophied. The nails are nowhere normal, being in some instances absent, and in others thick, rough, bent, and deformed.

No change in the sensibility of the skin could be detected. The father stated that the disease had begun, when the child was ten days old, upon the feet, and that its progress had been slow but unremitting.

The author thus sums up the peculiarities of the affection: It is a congenital ichthyosis-like disease of the skin in which bullæ form, leaving behind red, tender scars, somewhat scaly at their borders. When these cicatrices finally fade, they leave lightly pigmented areas. The nodules, with their gruel-like contents, are really the ducts of sweat-glands which have undergone a cystic degeneration, having first been partly obliterated by inflammation.

Clavi Syphilitici.—Lewin (*Archiv f. Dermatologie u. Syphilis*, 1893, Heft i. No. 2) describes under the above title a corneous affection of the palms and soles, which he thinks is often of great importance in the recognition of syphilis. In size the lesions vary from a pin-head to a bean. In shape they are generally round, but may be oval. The clavi seem to be set in the skin, rising but little above the general level. Their surface is not convex, but flat, and sometimes even concave, and this fact is of special note from a diagnostic stand-point. The color depends on the age of the clavus, being at first a pale rose, later changing to a yellowish color resembling horn, and finally when scaling is present being a glistening white. At first the lesions are somewhat soft like a corn, but finally they become hard like cement; so that while at first the clavus could be picked into shreds with a needle, eventually by such manipulation it crumbles into bits. The skin immediately surrounding a syphilitic clavus does not always present any abnormal appearance; but sometimes there is a pale-red halo or a crown of whitish epidermic scales. The usual site of these lesions is the palms; the soles are less often affected, and in rare cases the flexor surfaces and sides of the fingers and toes may be implicated. While the non-specific corns are prone to appear at the folds of the joints of the palms and soles, the syphilitic clavi show no such predilection; neither is their

distribution influenced by the creases of the skin or the course of nerves. Lewin, from his own observations as well as from the account of patients, thinks the evolution of syphilitic clavi is as follows: At first appears a small, red erythematous spot which gradually fades to brown. While this is occurring a thickening of the epidermis is noted, which has the peculiarities above mentioned. For a time a reddish halo remains about the base of the clavus and then fades. In rare cases the surface of the clavus scales off in small lamellæ. Subjective symptoms are often absent, and when present consist of very slight itching or tingling. The radiating pain frequently found in clavus vulgaris is never observed in clavus syphiliticus. Warts, corns, and callosities are to be distinguished from syphilitic clavi. Warts are more prominent, have a cracked, rough surface, and very rarely occur in the palm, and frequently a history of an origin by infection can be obtained. Corns are most common on the joints and horny prominences of the feet, being extremely rare on the hands; while the central cone or plug, often noted, and the spontaneous radiating pain, serve still further to mark their nature. Callosities are not usually round and sharply defined as are clavi syphilitici.

The author thinks the clavus syphiliticus of special worth, because in some cases, which afterwards proved to be clearly syphilitic, it has been the only sign present at the first observation.

HYGIENE AND BACTERIOLOGY.

IN CHARGE OF A. C. ABBOTT, M.D.,
First Assistant in the Laboratory of Hygiene, University of Pennsylvania.

The Statistics of Four Thousand Examinations of the Sputum. (4000 Sputum Untersuchungen statistisch verwertet: Mittheilung aus dem Bacteriologischen Laboratorium. Von J. Amann, in Davoz Platz. *Centralblatt für Bacteriologie und Parasitenkunde*, Bd. xiii. p. 353.)

The following instructive statistics presented by Amann will serve as a guide to those who systematically follow the course of tuberculous patients through the microscopical examination of the sputum.

The four thousand examinations of sputa were from 1792 different patients.

A. Tubercle bacilli were found in 1498 patients,—83 per cent.

B. Tubercle bacilli were found:

at 1st examination	in 1027	patients,	69	per cent.
only after 2d	"	"	291	"	19	"
" " 3d	"	"	105	"	7	"
" " 4th	"	"	59	"	4	"
" " 5th	"	"	11	"	.7	"
only after more than 5 examinations	in 5	"	.3	"

In 30 per cent. of the cases examined, therefore, it was necessary to examine the sputum a number of times before the bacilli were detected.

D. In 856 there were observed:

A complete and continuous disappearance of the bacilli from the sputum in 16 cases,—1.7 per cent.

A decided diminution of the number of bacilli in the sputum in 144 cases,—16.8 per cent.

A decided increase in the number of bacilli in the sputum in 254 cases,—29.7 per cent.

No essential alteration in the number of bacilli in the sputum in 442 cases,—51.5 per cent.

It is to be remarked that in the 16 cases from which there was a disappearance of the bacilli from the sputum, the sputum likewise disappeared.

E. During the winter season of 1889–90 influenza prevailed at Davoz; during its prevalence 205 cases were examined, as follows:

Complete disappearance of the bacilli from the sputum in 2 cases,—1 per cent.

Appreciable diminution of the bacilli in the sputum, 21 cases,—11 per cent.

Appreciable increase of the bacilli in the sputum of 115 cases,—56 per cent.

No alteration in the number of bacilli in the sputum, 66 cases,—32 per cent.

F. During the season of 1890–91, the time at which tuberculin was being used in practice, 303 patients were examined, as follows:

Complete disappearance of bacilli from the sputum, 2 cases,—.66 per cent.

Appreciable diminution of bacilli in the sputum, 73 cases,—24 per cent.

Appreciable increase of bacilli in the sputum, 191 cases,—62 per cent.

No change in the number of bacilli in the sputum, 37 cases,—13 per cent.

G. For the four seasons of 1886–87, 1887–88, 1888–89, 1891–92, 554 patients were examined, as follows:

Disappearance of the bacilli from the sputum in 12 cases,—2.2 per cent.

Appreciable diminution of the bacilli in the sputum in 112 cases,—21 per cent.

Appreciable increase of the bacilli in the sputum in 169 cases,—31 per cent.

No change in the number of bacilli in the sputum in 252 cases,—46 per cent.

H. The temporary disappearance and subsequent reappearance of the bacilli in the sputum were demonstrated in 66 out of 856 patients.

I. In 31 fatal cases there was:

Disappearance of bacilli from the sputum, 0 cases,—0 per cent.

Appreciable diminution of bacilli in the sputum, 2 cases,—6 per cent.

Appreciable increase of bacilli in the sputum, 21 cases,—68 per cent.

No change in the number of bacilli in the sputum, 8 cases, 26 per cent.

In 7 cases the increase in the number of bacilli in the sputum was very pronounced, and in 8 cases, indeed, enormous.

M. Elastic fibres appeared in the sputum of 8 cases in which no bacilli could be demonstrated. Of these, 4 cases were of advanced bronchiectasis, 1 was an abscess of the lung, and the remaining 3 were of doubtful nature. In eleven per cent. of the tuberculous patients it was impossible to detect elastic fibres in the sputum. By far the greater proportion of these cases were of young people with incipient phthisis. In eighty-eight per cent. the sputum contained both bacilli and elastic fibres.

In one and the same patient the presence of bacilli in the sputum, and the relative proportion in the number, is far more constant than the appearance of the elastic fibres.

N. Of the 16 cases from the sputum of which the bacilli disappeared, 11 contained no elastic fibres, while the remaining 5 contained them.

O. In the 31 fatal cases, elastic fibres were present in the sputum of all, and in the majority of them, in relatively large amounts.

The Disinfection of City Sewage by Means of Lime. (Die Desinfection der städtischen Abwässer mit Kalk. By Pfuhl. *Zeitschrift für Hygiene und Infectionskrankheiten*, Bd. xii. p. 59.)

The practical employment of lime for the disinfection of sewage, as recommended by Pfuhl, is as follows:

In order to render free from danger fresh sewage that may contain the organisms of typhoid fever or Asiatic cholera, it is necessary that lime be added to the sewage in the proportion of at least one to one thousand. In this proportion disinfection is complete in from one hour to one hour and a half. It is necessary that during the addition of the lime the sewage be kept in motion, so that there will be a homogeneous distribution of the lime throughout it, for it has been shown by experiment that, in sewage not so stirred, lime may be added often to the extent of three to one thousand, and yet living typhoid bacilli may be detected after two hours, a condition evidently due to the restriction of the activity of the lime to and immediately about the point in the still sewage at which it was deposited.

In practice it is further to be observed that the disinfectant activity of the lime is frequently interfered with through the presence of precipitating substances, such, for example, as the salts of sulphuric acid. It is also necessary that the lime should be of the best quality and freshly burned,

so that, in calculating the amount necessary for a given volume of sewage, only pure calcium hydrate will come into the computation.

Contribution on the Study of Immunity acquired against the Pneumococcus. (From the Laboratory of M. Metchnikoff, in the Pasteur Institute. By B. Issaeff. *Annales de l'Institut Pasteur*, tome vii. No. 3.)

1. The toxines of the pneumococcus of Talamon-Fraenkel provoke a more energetic reaction in rabbits vaccinated against this microbe than in animals not so vaccinated.

2. The serum of the blood of rabbits vaccinated against the pneumococcus infection, whilst having therapeutic properties, has nevertheless no antitoxic power.

3. The serum of vaccinated rabbits has not the property of attenuating the virulence of the pneumococcus.

4. The pneumococcus cultivated in the serum of vaccinated rabbits does not lose the property of producing toxines.

5. The pneumococcus inoculated into a vaccinated rabbit preserves its pathogenic properties about eighteen hours, and its vitality about forty-eight hours after inoculation.

6. In the immunity acquired against the pneumococcus phagocytosis plays a most important part.

PATHOLOGY.

IN CHARGE OF ALLEN J. SMITH, A.M., M.D.,

Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas.

Hyaline Globules and Thrombi in the Vessels of the Brain in the Acute Infectious Diseases. (Ueber hyaline Ballen und Thromben in den Gehirngefässen bei acuten Infections-krankheiten. *Virchow's Archiv*, Bd. cxxx. H. 2.)

In his work on general pathology Klebs describes under the name "globose hyaline degeneration" bright, shining plugs which he discovered in the vessels of the brain of a case of hereditary chorea, attributing the occurrence to the cerebral disease. In the journal referred to, Dr. Paul Manasse states that several years since he encountered the same substance in the cerebral vessels of a case of chorea dead from erysipelas, and with a view of determining its relations to the cerebral disease undertook a systematic examination of a number of brains from individuals dead from cerebral affections, as well as those from persons dead from other diseases for purposes of control. It happened that the first time the substance was met with in this series was in a case dead from typhoid fever; and the absence

of cerebral disease and the coincidence of an infection in this and in the author's first case suggested the idea of a relation between the infectious character of the malady and the formation of these hyaline spheres and thrombi in the cerebral vessels. Out of thirty-nine cases examined, twenty had died from infectious diseases, in all of which the results were positive; of the other nineteen all were negative.

In demonstrating these masses the author suggests the hardening of the brain in alcohol, and staining the sections with Weigert's fibrin stain; alum-carmine, saffranine, eosin, Bismark brown, or fuchsin will, however, serve the latter purpose, although in a less satisfactory manner. The substance is insoluble in acids and alkalies. Acid fuchsin serves fairly as a staining reagent, if nitric acid, water, and alcohol be employed for differentiating. The author, by experiments upon the brains of animals recently dead, and by examination of brains permitted to decompose, disposes of the idea that these hyaline masses may be the result of post-mortem changes, or of processes of preparation. It would have been remarkable, too, if in the brains from the twenty infectious cases success had been so uniform, and in the other nineteen failure so universal, had this hyaline substance been a post-mortem product.

As to the nature of the material, the behavior with the fibrin stain, the fact that here and there some of these hyaline balls might be seen with fine fibrillar prolongations, the fact that about these hyaline masses large numbers of white blood-corpuscles might be seen grouped as though contributing to their growth, the fact that the author was able to artifically produce small globules of an apparently identical substance in a tissue rich in leucocytes (a pharyngeal tonsil), all these considerations have led Dr. Manasse to conclude that it is formed from white blood-corpuscles.

The author finally states, therefore,—

1. In the acute infectious diseases there may be constantly found in the vessels of the brain, hyaline balls and thrombi.

2. These are formed during life, and are most probably a product of the white blood-cells.

The Structure of Human Thrombi and the Occurrence of Blood-Plaques in the Blood-Forming Organs. (Ueber den Aufbau der menschlichen Thromben und das Vorkommen von Plättchen in den blutbildenden Organen. *Virchow's Archiv*, Bd. cxxx. H. 1.)—Dr. Ludwig Aschoff announces the following conclusions as the results of a series of clinical and experimental investigations:

1. The matrix of every thrombus is composed, as far as spontaneous thrombosis is concerned, of a white substance.

2. This white substance presents a coral- or sponge-like structure, made up of a system of rounded or flat trabeculæ. These consist of a central mass of blood-plaques and a peripheral covering of white blood-cells.

3. The free spaces remaining between the trabeculæ in this white sub-

stance are filled with fluid blood or with blood already (*intravitam*) fixed by stasis and secondary fibrin-formation.

4. The secondary occurrence of the formation of fibrin is proved by the fact that the first delicate fibrinous net-work is to be seen on the borders of the trabeculæ spoken of, especially corresponding to the grouping of the white blood-cells, and by the fact that it extends from the trabeculæ out into the contents of the spaces, into the red blood.

5. The spongy substance of the thrombus (that is, the finely granular trabeculæ formed from the blood-plaques and the granular, broken-down white blood-corpuscles) is replaced by fibrin, either through a process of solution or by direct transformation.

6. The formation of the primary principal trabeculæ follows a definite arrangement, with regular intervals between them, due either to vibratory conditions in the undulations within the vessel, or depending upon previously existing, physiological projections of the vessel-wall into its lumen.

7. The pure red masses in a mixed thrombus serve only to fill in between the generally larger number of previously formed, lamellated white thrombi, which act as dams, and eventually prevent the further flow of the red blood. The red blood thus rendered stagnant may even during life take part in the coagulation. The divisions so frequently marked in the red masses are produced by numerous root-like outshoots from the substance of a white thrombus, arranged in a lamellar manner, and inclined in the direction of the circulation.

8. The noticeable ribbing of the surface of white or mixed thrombi, and the net-like marking by fine, clear lines on the surface next the vessel-wall, represent the terminal portions, the extremities of the lamellæ of the thrombus.

The microscopic recognition of typical trabeculæ (as described above, paragraph 2) constitutes the safest evidence of the formation of the thrombus during life.

9. Of etiological importance in relation to thrombosis in general must be regarded alteration or deterioration of the blood elements; the point of formation depends upon such circumstances as the slowing of the blood-stream, the disarrangement of the stream, as by eddies, narrowing or widening of the current, alterations in the vessel-walls, etc.

10. A sudden setting free of fibrin ferment, and a consequent formation of fibrin in the circulating blood, must be rejected as the cause of thrombosis in the spontaneous formation of human thrombi.

REVIEW OF ITALIAN, SPANISH, AND PORTUGUESE MEDICINE.

IN CHARGE OF A. M. FERNANDEZ DE YBARRA, M.D.,
New York,
Corresponding Member of the Medico-Chirurgical Academy of Madrid, Spain, the Argentine Medical Circle of Buenos Ayres, South America, and the Society for Clinical Studies, of Havana, Cuba.

Dreams considered in their Physiological, Psychological, and Pathological Aspects. (*Italia termale,* February, 1893.) By M. Macario.

Sleep is a necessary function of the human organism, indispensable to life, and consequently it is absurd to say that it is the image of death. From the moment sleep renders our eyelids heavy, and the perception of the senses gets more or less temporarily abolished, dreaming lays hold on us. This marvellous operation of our mind is connected with the most serious questions in physiology, psychology, and pathology; and in spite of the great interest involved in clearing up the phenomena produced by it, their study has never been entirely satisfactory. The author modestly abstains from mentioning his remarkable paper on the subject, published in the *Annales médico-psychologiques*, vol. viii.; but it is well known by all lovers of those deep researches that there are probably very few persons so thoroughly qualified as he is to undertake them. Dreams have served him as the basis of his arguments to prove the duality of man, and the permanent activity of some few faculties of the mind. He has studied dreaming in the healthy state and also during sickness, claiming this method to be the only scientific one to arrive at a conclusion.

In this latter contribution to the subject M. Macario explains the modifications which the different faculties of the mind undergo during sleep, and comes peremptorily to the conclusion that the intellect is passive during the act of dreaming, while it is active in wakefulness. He also touches upon certain facts which, up to the present time, have passed unheeded and greatly contribute to elucidate some yet obscure points in psychiatry.

A Case of Strangulated Adipose Hernia; Operation; Cure. (*Giornale internazionale delle scienze mediche,* December 30, 1892.) By Musconi Guilio.

After a summary history of adipose hernias in general, the author gives the following account of a clinical case, here condensed: F., fifty-three years of age, had during nine years a small, indolent, irreducible tumor in the right groin. In the course of the ninth year its volume increased to twice its former size, and colicky pains occasionally followed. The last crisis, more severe than the others, was accompanied by unmistakable signs of strangulation,—vomiting even of fecal matter, more or less collapse, abdominal pain, absence of emission of gas through the anus,—and the hernial tumor appearing of a red-purple hue, œdematous, solid, lobulated, and somewhat painful to the touch. The taxis failing, herniotomy was per-

formed by making an incision parallel to the crural arch, which brought to view a voluminous tumor adherent to the periphery, and occupying all the course of Poupart's ligament; the adhesions around the neck of the sac were detached, and after incising Poupart's ligament, the intestine was found entirely free and only slightly congested. The hernial sac was bound to the intestine by recent adhesions. After the sac had been tied the tumor was removed, and weighed one hundred and eighty grammes. Proper ligatures were applied, and the patient made a quick recovery.

The author's opinion in regard to the pathogeny of this variety of hernias is that the fatty tumor formed in the crural canal develops slowly, dilates the ring, and can give rise to inflammatory processes that cause peritoneal adhesions. The hernial tumor exerts a continued traction on the peritoneum, and may be the initial cause of the formation of a sac, and afterwards produce the strangulation of its neck.

Epithelioma of the Glans Penis; Amputation of the Organ according to Rubio's Method. (*El Siglo Médico*, Madrid.) By Dr. Garcia Hurtado.

A man of forty years of age had a small erosion in the glans penis, which slowly increased in size, and was finally transformed into an *excrescent* epithelioma. Antisyphilitic treatment was employed to test the true nature of the growth, and the diagnosis of cancer having been thus confirmed, amputation of the penis was decided upon, the operation to be carried out according to the method of Professor Federico Rubio, of Madrid.

Manner of Procedure.—After properly anæsthetizing the patient a soft rubber tube, of the calibre of a goose-quill, is passed twice around the base of the organ, an assistant holding tightly the two ends with a pair of Péan's forceps. The operator seizes the glans penis, steadies the organ, and with one clean stroke of a sharp pair of scissors divides all the affected portion. The arteries of the corpora cavernosa and branches from the dorsal artery of the penis having been tied, the rubber tube is loosened, paying but little attention to capillary hemorrhage, and instead of slitting open the urethra at its termination, a hard catheter is introduced into it, and a hypospadias made at a distance of about one centimetre from the cut end. The mucous membrane and the skin are well sutured, and a Nélaton's catheter left permanently in position to keep the end of the urethra open. All this once done there remains only to cover with the skin the corpora cavernosa.

In the clinical case above mentioned it was necessary to remove also several inguinal glands. The patient was up in a few days.

FORENSIC MEDICINE.

IN CHARGE OF LORENZO D. BULETTE,
Of the Philadelphia Bar.

LEGAL LIABILITY OF A PHYSICIAN UPON WHOSE CERTIFICATE A SANE PATIENT IS COMMITTED TO AN INSANE ASYLUM.[1]

(Concluded from page 302.)

"Now, the plaintiff originally shaped his case in two ways: the *first* charged the defendant with being a party to his arrest, and actually causing him to be seized and imprisoned. But I think that, looking at the whole of the evidence, there was hardly sufficient evidence to charge him in that way. The wife applied, and there is no evidence that before sending the husband to the asylum the defendant interfered in any way, except by going to see him and examining him and going again to make a certain other inquiry. It would be hardly satisfactory to you to proceed upon that ground of complaint; and, indeed, it seems to have been virtually abandoned, and the real ground of complaint seems to be contained in the second count.

"That count charges that the defendant, being a physician, falsely and maliciously and without reasonable cause, and with intent to cause the plaintiff to be put under restraint, as of unsound mind, did, as such physician, sign a certificate whereby he falsely and maliciously certified that he, being a physician, had examined the plaintiff and found him to be of unsound mind. The evidence seems chiefly to relate to that part of the charge. There is, indeed, an allegation that he did falsely and maliciously cause and induce G. to give a similar certificate; and if you take the view that he falsely and maliciously signed his own, probably you may think that he induced G. to do so too. But if you think that it was rather a case of negligence than of malice, then that other part of the charge will hardly arise. The question is certainly for you; but so far as the evidence goes it seems that G. had espoused the cause of the wife very strongly, and that he rather induced the defendant to sign than that the defendant induced him to do so. This would probably appear hardly a safe ground to proceed upon."

The charge of malice on the part of the defendant in making his certificate was not pressed at the trial. On the question of malice the Court said,

[1] The first and second instalments of this article, which the limited space at our disposal made it necessary to divide up, appeared in the March and April numbers of this Magazine.—EDITOR.

"It appears to me that in a case of this kind malice is not necessary to give the right of action. I will tell you why I think so. In an action for a malicious prosecution it is so from the peculiar nature of that action, and, therefore, no matter how maliciously the thing was done, the action does not lie if there was any reasonable cause. But that is not the kind of complaint that is here made. . . . The second count of the complaint comes really to this, 'You did this without having any reasonable ground for supposing that he was insane.' If the defendant signed the certificate without reasonable grounds, and without proper examination and inquiries, this would be acting without reasonable or probable cause; and that it came to this, whether the defendant had neglected his duty to make such examination or inquiries; and that, if so, the action would be maintainable. The true ground of this complaint, therefore, is the negligence of the defendant, and the want of due care in the discharge of the duty thrown upon him. Take me as telling you, in point of law, that if a physician assumes under this statute the duty of signing such a certificate, without making, and by reason of his not making, a due and proper examination, and such inquiries as are necessary, and which a medical man under such circumstances ought to make and is called on to make, not in the exercise of the extremest possible care, but in the exercise of ordinary care, so that he is guilty of culpable negligence, and damage ensue, then that an action will lie, although there has been no spiteful or improper motive, and though the certificate is not false to his knowledge. . . . Of course, as I shall explain afterwards, that would not apply to a mere error of judgment. It is not that a physician is bound to form a right judgment, so as to be liable to an action if he does not. There are cases of insanity which are very difficult to deal with or to understand. But what he is required to do is to make an examination, and, if it be necessary, to make further inquiries, and not to act without such inquiries as may be required. It would be dreadful if a man were to be visited, in cases of this kind, for consequences arising from a mere error in judgment or a mistake in fact. There must, to make him liable, be culpable negligence, as I have described; and if you are satisfied that there has been this negligence, then the defendant is liable. That question is entirely for you upon the whole evidence. It is for me to lay down as law, that the nature of the action is for breach of the duty cast upon the medical man, the discharge of which is so important to the liberties of his fellow-subjects, and that in the discharge of that duty he is bound to use all reasonable care."

As to the degree of care requisite in making a medical examination of a patient in respect to his sanity the Court said, "I cannot help thinking that in a matter of this kind, which is not like a preliminary inquiry before a magistrate, but a proceeding upon which a man is to be at once consigned to imprisonment as a lunatic, very considerable care is necessary. It will be for your consideration what degree of care is necessary so as to make out, by the absence of it, a case of culpable negligence. One can hardly say precisely what that degree of care may be. It could not be said, perhaps, that the medical

man is bound to examine every person connected with the party. The matter is for you. You are acquainted with the ordinary exigencies of life; you must judge as men of the world by the light of your common sense. It is a matter which, you see, depends somewhat upon degree. It is said that one man might be satisfied with a quicker examination than another. We, for instance, should take a long time before we should be able to form a judgment on a matter of this kind. A person experienced in such matters might decide more quickly, while an ordinary medical practitioner might require a longer time. We may take it, however, as clear that considerable care ought to be used, and the question for you is whether the proper degree of care was used, or whether there was that culpable negligence which has been imputed to the defendant. It is not a mere mistake or error in judgment which would amount to such negligence, but you must be satisfied that there was culpable negligence."

As to the contention of the defendant that it was not obligatory on him to make further inquiries, the Court observed, "It appears upon the evidence that the defendant was not satisfied with the personal examination; and that you must take to be the fact, and consider whether it would not throw upon him the duty of further inquiries. You could hardly say that he was acting 'under the authority' of the act if he had signed the certificate solely upon an examination with which he was not satisfied. . . . If the defendant knew that he was giving a false certificate it would be a very serious case indeed. But you can hardly say upon the evidence that he meant anything so wicked as to give a certificate knowing it to be false. The real test of negligence or want of reasonable care in not making further inquiries is, how matters would appear to the defendant under all the circumstances; and you should endeavor, as far as possible, to put yourselves in his situation, and see how far appearances were sufficient, without any further inquiries than he made. We have a great deal of evidence as to the conduct of these two parties,—the husband and the wife,—and the question of the plaintiff's insanity. We are not trying whether the plaintiff was sane or insane; it is impossible, however, to exclude that question, as to which you had the evidence of many of the neighbors. Now, neighbors in case of a delusion are not always judges. Delusions may be hidden from their eyes. We have strong evidence, however, from a medical man who saw the plaintiff just before he was taken. The medical evidence, however, was not so strong on this point as I had anticipated it would be in favor of the plaintiff. The visitors in lunacy did not dispose of the case on the ground that the plaintiff was sane. They did not decide the question at all. They have been reproached for not having done so. But I don't know whether they were bound to do so when it was quite clear that the plaintiff could not be legally detained on the certificates as they stood. They might have felt great doubt upon it; and it rather appears that they thought it a case on which they had not made up their minds, though they paid considerable attention to it. The certificate of G. was given on an

examination three weeks before, whereas the act requires that it should be within seven days. It was said that this might have been amended if the visitors had really thought the plaintiff insane; but I don't see how it could have been amended, as it was not a mere informality. There had been no proper examination, and therefore there was no legal foundation for the proceeding, and the whole fell to the ground. I cannot, therefore, blame the commissioners for saying at once that the man could not be detained on these certificates, and for not giving any decided opinion on whether he was sane or insane.

"Let us now look at the effect of the medical evidence, not forgetting that it is not simply a question of sanity or insanity, although that incidentally arises and is necessary to be considered; but we are not deciding it, except so far as may be material in determining the main question. In trying that question, you can see that there was considerable provocation on both sides, and the husband admitted the use of very disgusting words, hateful to female ears. The wife, it is plain, entertained very strong feelings towards him, and he, very likely, was bitter against her. You may think the strength of the evidence on that head is in favor of the husband, but it is plain there was great bitterness on both sides; and it is clear that the wife had for some years been trying to get rid of her husband by having him put into a lunatic asylum, and the certificates of insanity all arose from her suggestion. It is plain also that, as I said before, G. had very strongly espoused her cause, and had a feeling about it. We are not now trying either the wife or G.; but it is plain that, with their feelings, they would make very strong representations to the defendant, who does not appear to have known them before. The conduct of G. is only material in that point of view as it appears that the defendant in a great degree relied upon his statements; and, as I said before, we should look upon matters as they would appear to the defendant when he was called upon to act. He did not know what had gone before; and in a case of lunacy, as in any medical case, a great deal depends on the history of the case.

"The first question would be whether inquiries were necessary. Sometimes a mere examination of the party might be sufficient; but the history of the case, where it is one of doubt or difficulty, is always of the greatest consequence; and here particularly so, for the defendant himself stated that on a mere examination of the patient he could not come to a conclusion without further inquiry. It is said that his opinion was ultimately founded principally on the supposed existence of delusions. Now, a delusion, of course, does not mean a mere mistake of fact. Hundreds of people may have notions that their friends have injured them, or their wives deceived them, not founded on fact, and yet not delusions, as we now use the word. By delusions we understand ideas fixed in the mind without anything to lead any rational being to entertain them. These delusions often accompany insanity, and so are taken to be *indicia* of insanity; and in this case, no doubt, it is extremely important, when so much stress is laid on 'delu-

sions,' to make up our minds whether they had any real foundation in fact. Now, I should very much doubt the case of the defendant if it rested on his examination of the plaintiff alone. It was a very short one, and he himself said it led him to no certain conclusion, and what took place at it is doubtful, as the plaintiff and the defendant gave contradictory evidence about it. It is agreed that he was not there above ten minutes.

"One great matter, as one of the supposed delusions, was whether the plaintiff charged his wife with infidelity. It is admitted that something was said about men coming after her. The plaintiff said he used the words 'tally-men,' or tradesmen coming after debts; but if these words were not used, or were not observed, the defendant may have fallen into a mistake, and a mere mistake is not negligence. Having been told by the wife that it was one of the delusions, he would naturally connect with it the expressions as to men coming after her. You will consider what took place on that occasion; but, what strikes me is that, at the end of it the defendant states he was not satisfied and had not made up his mind, and this seems to throw us upon the subsequent inquiries with a view to see whether he was properly satisfied with them. It would be culpable negligence on his part if he did not make due inquiries.

"It is said that he ought to have made inquiries of the man's near neighbors and old friends, and especially of his grown-up children and son-in-law. It is easy, after the event, to say what should have been done, and it is better to consider whether what the defendant really did was sufficient. It is said that he should have gone to doctor F., the regular medical attendant of the family; and it would have been better if he had done so. Still, the wife had applied to him, and referred him to G., and it was natural that he should follow her lead. On the other hand, it would have been but natural that he should also go to the medical man to whom the patient referred him. It is very important, however, to consider what effect the first interview was likely to produce on the mind of the defendant, and especially as to subsequent communications. We may be sure, from what we saw of the wife, that she would put her view and her complaints as strongly as she could; and as to G., who would speak strongly from the feeling which he had imbibed in her favor, and who seems rather to have led the defendant than to have been led by him."

On the question as to whether the evidence of culpable negligence on the part of the defendant is sufficient to satisfy the minds of the jury in returning a verdict for the plaintiff, the Court said, "Insanity is a delicate matter. Perhaps on that account there ought to be the greater care. Still, negligence must be made out, and the question for you is, how far it is made out. There was a great body of evidence on both sides chiefly directed to the question of sanity or insanity. The conduct of these parties, the husband and the wife, towards each other, is only material so far as it bears on the question of the existence of these alleged delusions. The defendant in his certificate states that, in his opinion, the plaintiff is insane, and, on the

grounds he sets forth you will judge of the truth of those grounds with reference to the evidence. 'Gay company and drink' are stated, but of these there appears little, if any, evidence. As to violence of temper: when the plaintiff was seized he seems to have shown considerable command over his temper. The neighbors stated that there was no trace of insanity about the man, and certainly there was little evidence of it. His violence towards his wife, the medical man had taken to show a 'monomaniacal aversion to his wife.' But as to its being monomaniacal, there is evidence that it was not wholly irrational, for the daughter was called and gave testimony in favor of her father, but stated that there was great provocation on both sides. As to the alleged delusion about infidelity, the husband denied the idea; and as to pawning, the wife admitted the fact. As to the alleged delusion about ruining, it was proved beyond a doubt that there was on the part of the wife some running into debt and pawning of goods, which were supposed to have been delusions of her husband.

"The great fact beyond dispute was that these parties had a great aversion to each other. Now, hate of another person may constitute a delusion when it is without any rational foundation. One of the medical men stated that the man was excited. Now 'excited' was a general term, and when medical men came in upon him in that way it was natural that he should be 'excited.' A man may detest and hate his wife very much, and yet not be a madman. Many a man ill-treats his wife without that excuse; and a man's behaving brutally to his wife does not show that he is insane. The blows and kicks, however, were spoken of, with one exception, only by the wife herself, though there were some appearances which might be deemed by the medical men to confirm her statements. One of the medical men, G., defined the plaintiff's insanity as 'diseased feelings' (a strange expression), likely to lead to violence and murder and 'manifested by a disinclination to see his wife comfortable.' In short, they put it as a violent, unreasonable antipathy against the wife without any rational ground. Doctor W. put it as a case of 'dominant passion of dislike to the wife.' No doubt there was this dominant passion of dislike; it began, as I have said, very early,—in the first month of the marriage. But it seems to have been as bitter on one side as the other, and it is for you to say whether it was more a ground for believing him to be insane than her."

On the suggestion made during the trial, and relied on by the plaintiff, that the conduct of the defendant after the plaintiff's discharge showed that he was aware he had acted wrongly; and his visit to the police station, and his letters to the proprietor of the asylum and to the wife, the Court said, "He may have been afraid that there was not evidence enough to support his certificate, and may have wished to get hold of the sword with that view. He no doubt did several foolish things,—for instance, in writing that letter stating that the man was a 'dangerous lunatic.' Still he may have done that honestly, although foolishly; and it is for you to say whether his conduct or letters are evidence of malice or wilful falsehood."

On the question as to whether the certificate was false to the defendant's knowledge, the Court said, "If a physician were to sign such a certificate, knowing it to be false, he would be very wicked, and it would be a crime which is made severely punishable under the statute. This is very much the same question as if it was maliciously done. Malice does not mean merely spite, but any improper motive; and to do or assist another in doing what one knows to be wrong and wicked is to act maliciously. . . . It might be reckless and negligent, and yet not malicious."

And on the question as to whether the defendant *bona fide* believed in the truth of the certificate from the inquiries he made, and believed that he was authorized by the act to do as he did, and was therefore protected under section one hundred and five (above quoted), even if he were guilty of culpable negligence, the Court said, "I direct you in point of law that it is not so. . . . It is my opinion strongly that such a case is not within the protection of that provision. It could not be pretended that a case of wilful or culpable falsehood was so; and if a duty which the act throws upon the medical man is culpably neglected, and he acts without performing that duty, he cannot make out as a defence that he was 'authorized' by the act to do as he did.

"In that case you will have to consider the question of damages; as to which—although you give damages by way of compensation rather than of punishment—your estimate of damages may depend on the view you take of the circumstances, whether you think this was a case of oppression or only a mistake. You may possibly think that there may have been some violence of manner on the part of the plaintiff which may have misled the medical men, and so to some extent led to this misfortune."

After hearing the evidence, and under the foregoing instructions of the Court as to the law of the case, the jury found specially that Dr. S., the defendant, did not cause the plaintiff to be assaulted and imprisoned; but they found that in making the examination and inquiries the defendant did not use due care and caution; that he acted negligently, without reasonable care and caution; that the certificate was false in fact; that he signed a certificate untrue in effect, without a proper examination and inquiries, and without probable cause; and that on that account he was guilty of culpable, blamable negligence in not ascertaining the sanity of the plaintiff, whom they found to be sane in point of fact. They did not, however, find that the certificate was false to the knowledge of the defendant; and found also that it was not done maliciously. They found that the defendant acted *bona fide*,—that is, that he honestly believed he was acting under the authority of the act, and was authorized by the act to do what he did. They therefore found a general verdict for the plaintiff on the ground of culpable negligence and want of reasonable care or probable cause, and assessed the damages at one hundred and fifty pounds sterling.

BOOK REVIEWS.

THE STUDENTS' QUIZ SERIES. Edited by Bern B. Gallaudet, M.D., Demonstrator of Anatomy and Clinical Lecturer on Surgery, College of Physicians and Surgeons, New York. Volume VIII. Diseases of the Skin. By Charles C. Ransom, M.D., Assistant Dermatologist, Vanderbilt Clinic, New York. Pocket size, 12mo, 192 pages, 28 Illustrations. Limp cloth, $1.00. Philadelphia: Lea Brothers & Co., 1893.

This little volume of about two hundred pages consists of a series of questions and answers intended to cover the essential points in dermatology. The various diseases are considered in alphabetical order, and a system of classification adopted by the American Dermatological Association is given at the end of the volume. A considerable number of well-executed wood-cuts representing various forms of diseases of the skin are interspersed throughout the text, the volume closing with a dozen pages of selected prescriptions.

The author of this manual is not always happy in his definitions, clearness being at times sacrificed to conciseness, and, owing to haste or lack of care in preparation, inaccuracies of statement are not wanting. As an example of the latter, the cause of *tuberculosis verrucosa cutis* is stated to be the same as that of ordinary verruca. The designation of the disease by the term tuberculosis is quite sufficient evidence that this statement is an error.

Books of this kind, if used as supplemental to the reading of more formal and elaborate treatises, may be of use to the student in preparing for examination, but if depended upon alone are, like most short cuts to knowledge, lamentably deficient. To the practitioner they can be of little service.

HANDBOOK OF MASSAGE. By Emil Kleen, M.D., Ph.D. Translated from the Swedish by Edward Mussey Hartwell, M.D., Ph.D. Philadelphia: P. Blakiston, Son & Co., 1892.

The increasing use of massage and the fact that so many incompetent persons have taken it up as a profession render this book particularly timely and valuable. The author is not a "massage specialist," not an enthusiast, but regards massage merely as one among many remedial measures. The book, therefore, is temperate and discriminating. The first eighty pages are occupied with historical matters, technique, physiological and therapeutical effects, and contraindications. The remainder is taken up with studies of special diseases. Every general practitioner should read and study the book, for there is too great a tendency among us, at any rate, to regard massage as being of use only in a certain class of functional nervous affections in women, the so-called neurasthenia, while its value in paralysis, joint-diseases, old injuries, etc., is apt to be overlooked.

NOTICES.

THE PAN-AMERICAN MEDICAL CONGRESS, SECTION ON DISEASES OF CHILDREN.

THE organization of this section is complete and the work of arranging a programme is well advanced. Numerous valuable papers have been promised, and the success of the meetings is assured. Physicians interested in diseases of children are cordially invited to attend these meetings, which give promise of great interest both to the specialist and general practitioner. Any American physician desiring to read a paper will please communicate at once with the Secretary, who will be pleased to furnish all needed information.

Executive President.—DR. JOHN M. KEATING, Colorado Springs, Colorado.

Secretaries.—DR. F. M. CRANDALL (English-speaking), No. 113 West Ninety-fifth Street, New York, N. Y.; DR. DAMASO LAINÉ (Spanish-speaking), Media, Pa.

Honorary Presidents.—DR. S. S. ADAMS, Washington; DR. A. D. BLACKADER, Montreal, Canada; DR. SAMUEL C. BUSEY, Washington; DR. CHARLES WARRINGTON EARLE, Chicago; DR. F. FORCHHEIMER, Cincinnati; DR. L. EMMET HOLT, New York; DR. A. V. MEIGS, Philadelphia; DR. W. P. NORTHRUP, New York; DR. J. O'DWYER, New York; DR. C. I. PUTNAM, Boston; DR. T. M. ROTCH, Boston; DR. J. LEWIS SMITH, New York; DR. LOUIS STARR, Philadelphia; DR. J. E. WINTERS, New York; DR. JESUS VALENZUELA, City of Mexico, Mexico; DR. I. N. LOVE, St. Louis, Missouri.

Advisory Council.—DR. WM. D. BOOKER, Baltimore; DR. AUGUSTUS CAILLÉ, New York; DR. HENRY D. CHAPIN, New York; DR. J. P. CROZER GRIFFITH, Philadelphia; DR. M. P. HATFIELD, Chicago; DR. THOS. S. LATIMER, Baltimore; DR. J. H. RIPLEY, New York; DR. AUGUST SEIBERT, New York; DR. CHARLES W. TOWNSEND, Boston; DR. JEROME WALKER, Brooklyn; DR. WM. PERRY WATSON, Jersey City.

THE SECTION ON THERAPEUTICS OF THE PAN-AMERICAN MEDICAL CONGRESS.

It is the earnest desire of the officers of the Section on Therapeutics of the Pan-American Medical Congress that both specialists and general practitioners should contribute articles to its proceedings.

Gentlemen who desire to read papers at this meeting should notify the undersigned at once of their intention, and should send him by July 10 at the latest an abstract of their paper, in order that it may be translated into the three official languages of the Congress, and published in the programme. The importance of this Section and the interesting papers which have already been promised give assurance of a very successful meeting.

PHILADELPHIA. H. A. HARE, *President of Section.*

THE EDISON CURRENT FOR CAUTERY PURPOSES.

Dr. Edward J. Bermingham (*New York Medical Journal*, February 4. 1893) describes an apparatus which he has devised for controlling the Edison current so that it can be used directly for galvano-cautery operations. The apparatus consists of a *rheostat*, made of coils of iron wire and a handle. The peculiarity of the handle consists of its having solid conductors, and the circuit is therefore always closed. It is under the control of the operator's thumb at all times during the operation, and the current can be cut off from or allowed to pass to the knife instantaneously and without producing an arc. The apparatus is simple and inexpensive. Dr. Bermingham has been using it for two years and a half for all his cautery operations.

INTERNATIONAL
MEDICAL MAGAZINE.

Vol. II.] JUNE, 1893. [No. 5.

ORIGINAL COMMUNICATIONS.

CYSTS OF THE FEMALE GENITAL TRACT.

BY JOHN M. KEATING, M.D.,
Colorado Springs, Colorado,
Editor "International Clinics," etc.

It is not at all an improbable occurrence for one to meet in private practice, even among those of the upper class of patients, a tumor which shows itself at the vulvo-vaginal outlet, and which at first may be puzzling as to its character. The tumor is usually not transparent, and fluctuates. It is about the size of a nut; sometimes it may increase to that of an egg; usually occupies one side. Sometimes inflames and suppurates. It never disappears on pressure, and from its general appearance, especially from the character of the material it contains, is readily diagnosed as a cyst. These cysts of the glands of Bartholin, called also Du Verney's or Cowper's glands, are interesting, because they are supposed to be due entirely to gonorrhœa. Gonorrhœal infection travelling through the excretory duct gradually obliterates the passage-way, and gives rise to the cystic formation. Indeed, long after the vagina has been entirely free from gonorrhœal disease, the duct of the gland of Bartholin will show suppuration upon pressure, a drop of pus coming from the opening of the gland, which is found immediately in front of the hymen. These cysts may suppurate or inflame, may start in with cystic degeneration and involve to a very great extent these parts. The pain then is most acute, with fever, and, at times, retention of the urine. The pus is unusually fetid, and the presence of the gonococcus may be detected. As regards treatment, it is necessary to freely open the cyst and split up the duct, an operation similar to that upon the lachrymal

duct. But this is especially the case in what Pozzi calls deep cysts,—those where the tumor is large and where the cystic disease is of the gland itself, and in which the duct is not permeable. It is necessary that the cyst should be extirpated, and not merely that it should be emptied of its contents. Free incision, followed by tamponing with iodoform gauze, and previous cauterization, is essential. Under the head of cysts I have described this as the principal one, because it is the variety which one most frequently meets, and which is a constant annoyance in private practice, unless it is immediately recognized, as no sooner do we think that the trouble has disappeared than the patient returns with the same condition. Cysts may also occur in the labia majora, and these are usually due to developmental irregularities, some of which contain the epidermic structures, such as hair, teeth, etc., or, in other words, are dermoid cysts.

CYSTS IN THE VESTIBULE.

Between the meatus and clitoris small cysts have been seen of the volume of a bean, containing yellow or greenish fluid, and, being invested with a layer of cylindrical epithelium, they probably have their origin in little sebaceous glands.

CYSTS IN THE URINARY MEATUS.

These may be derived from the *cul-de-sac* described by Kocks and Freund, which corresponds to the terminal vestige of Gartner's canal. It may be well to state that further researches by others have not sustained the conclusions of these observers. It may be also that cysts may occur in the glands described by Skene, two in number, between the mucous membrane and the muscular layer of the urethra which open near the meatus. Cysts may also occur in the hymen, according to Winckel, and contain the products of disintegration of the pavement epithelial cells. Indeed, the case quoted by this authority is an interesting one, as the vaginal cyst which had occurred in a new-born, healthy babe, was the size of a cherry, and interfered with micturition. When the child cried, the tumor projected through the hymen between the nymphæ. Breisky records another case like this in a healthy babe, seven weeks old. The cyst was the size of a hazel-nut. It is supposed by these authorities that the derivations of these cysts are from rudiments of Müller's duct.

CYSTS OCCURRING IN THE LABIA MINORA.

These are rare, and I quote from a recent report of Dr. William S. Bagot, now of Denver, Colorado, formerly senior assistant physician of the Rotunda Hospital, Dublin, which reads as follows:

"As far as I have read, the literature on the subject is extremely scanty, and though some authors mention the occurrence of cysts in connection with these parts, or the possibility of it, I have been able to obtain records

of only four other cases where cysts have been found arising in the labia minora. None of these, however, correspond in their description to the case which I shall bring under your notice this evening. They are as follows, for the number of observations being so limited, it will not detain one long to relate each briefly:

"The first, by Dr. R. T. Smith, who, at the British Gynæcological Society, showed two cysts which he had removed from the labia minora of a woman, aged twenty-eight years, who had had one child eleven years previously. The cysts were placed symmetrically on either side within a third of an inch from the clitoris. Their contents were mucous.

"The second and third observations are recorded by R. A. Browne in the 'Annual of the Universal Medical Sciences," 1890, where he relates two cases of a cyst occurring in the labia minora. In both the cyst was single and on the right side, about the size of a hen-egg, and freely movable. Both contained fluid of a thick, gelatinous character. The lining membrane of the cysts was serous. The cavity extended in the direction of the round ligament towards the cornu of the uterus. One of them he opened several times, and as it refilled he finally took out part of the cyst-wall and injected iodine. In the second case he operated as before, but did not inject iodine.

"The fourth case is also recorded in the 'Annual of the Universal Medical Sciences," 1890, where it is stated that Dr. J. Uhler removed by enucleation a cyst with semi-solid contents; the lining of the cyst was serous.

"The following case is of considerable interest:

"M. W., a stout, healthy-looking, unmarried girl, aged twenty-three, was sent to me from the country, as she had been suffering from a tumor which projected from the vulva and interferred with her movements while walking. She also suffered from constipation and dysmenorrhœa.

"On examination I found a tumor, about the size of a small hen-egg, projecting from the vestibule. It involved both labia minora and the under surface of the clitoris. Its outer surface was smooth, with the exception of a projection on the inferior aspect, caused by a small secondary cyst which sprang from that part. The urethra was quite free from the tumor, which involved only the labia minora and the inferior aspect of the clitoris.

"The vaginal orifice was normal, the hymen intact, the cervix conical, and the fundus retroverted. There was a good deal of endo-cervical discharge. The internal os was patulous, and the endometrium, which was thick and soft, bled freely after the sound was passed. The uterine appendages were normal. Having curetted the uterus, I replaced the fundus, and introduced a Hodge pessary. I then dissected out the cyst and closed the cut surfaces by means of a continuous suture of juniperized catgut. The patient made a perfect recovery. (See Fig. 1.)

"On examining the tumor I found that it consisted of a large cyst, in the wall of which were several smaller cysts; the largest of these, about

the size of a haricot bean, projected from the inferior aspect of the tumor. All the cavities contained the same yellowish, creamy material, consisting of cholesterine crystals, *débris*, globules of granular matter, fat-globules, and a few lymphoid cells. The walls of the cysts were thin, and lined on their inner surface by a smooth, glistening membrane. Dr. Earl has kindly made microscopical preparations, which show that each cyst-wall consists of fibrous connective tissue lined on the internal surface by a stratified pavement epithelium, and clothed externally by the ordinary compound squamous epithelium."

Fig. 1.

Cyst of the labia minora, vestibule, and clitoris.

In addition to these, various vaginal cysts may make their appearance, and these, according to Charlot (*Annales de Gynécologie*, July, 1892), may be classified as follows:

First. Glandular cysts.

Second. Lymphatic cysts, lined with endothelium.

Third. Hygromas and large bursæ, developed by injury.

Fourth. Sero-cysts, developed in spaces produced by detachment of the coats of the vagina during parturition.

Fifth. Cysts developed from hæmatoma.

Sixth. Müllerian cysts, or lateral hæmatocolpus.

Seventh. Para-vaginal hydatids.

Eighth. Cysts developed from the Wolffian ducts.

A CASE OF MEDIASTINO-PERICARDITIS IN A CHILD; SECONDARY EMPYEMA; OPERATION; DEATH.

BY WILLIAM A. EDWARDS, M.D.,

San Diego, California,

Fellow of the College of Physicians of Philadelphia, American Pediatric and Philadelphia Pathological Societies; formerly Instructor in Clinical Medicine and Physician to the Medical Dispensary in the University of Pennsylvania; Physician to St. Joseph's Hospital; Associate Pathologist to the Philadelphia Hospital, and Member Advisory Council for the Section on Diseases of Children of the Pan-American Medical Congress.

THE early clinical symptoms of mediastinitis are most indefinite, and the disease is one that may be readily overlooked until some of the secondary or concomitant symptoms assist in clearing up the diagnosis; even then, however, the primary pathological change may escape detection unless a post-mortem is obtained.

It is on this account that I deem the following case worthy of record:

M. D., aged six, was under the care of Dr. Bowditch Morton, of Coronado, by whom I was called in consultation. The child was somewhat below the average in development, strength, and vitality; she complained of a constant pain, with marked exacerbations over the left costo-sternal region, extending from about the mid-sternal line to a little below the costo-xiphoid angle; over this region it was thought that there was some impairment of the normal percussion resonance, although this alteration was not marked.

The cervical veins were distended, the action of the general circulation was tumultuous and irregular, the temperature was a degree and a half above the normal. The child remained in about this condition for the next thirty days, the temperature, however, remaining high, sometimes 103°, usually 101°, rarely normal, if so, remaining at that point for a few hours only. Upon the next consultation, dulness was marked in the region above described, and extending towards the left anterior axillary line.

The respiration and circulation were much interfered with, the former was recorded at from 28 to 40 per minute and the latter from 135 to 160. No pericardial or exocardial murmur could be detected now, or at any future time during the progress of the case; slight œdema of the face was present and a similar condition about the ankles. The liver was somewhat enlarged, but ascites did not arise.

The temperature was now ranging from 103° to 104.5° in the afternoon, falling to 99.5° or 100° in the morning. No sweats. Urine contained albumin.

An aspirating needle was introduced at a point a quarter of an inch

within and above the position of the normal apex-beat of the heart; pus was obtained. Ether administered and incision made, nine ounces of pus removed, and a rubber drain inserted; dressed with iodoform gauze and bichloride cotton.

The child was much relieved.

Within a fortnight I was again called to the case, Dr. Morton's record showing that the temperature was far above the normal,—maximum 105° F.,—the case was not progressing favorably, notwithstanding the fact that the drainage was good and sufficient. Careful physical examination demonstrated a collection of fluid, probably pus, within the pleura, evidently sacculated; an incision was made in the eighth interspace, at the post-axillary line, the point of maximum dulness, sixteen ounces of pus was removed, and a rubber tube inserted as before.

The child again did well for a few days, large masses of fibrin came away in strings and sheets; the drainage was good, but the temperature remained high (102° to 104° F.); tonics, nourishing food, stimulation, and out-door life were resorted to, and the little patient gained somewhat. The empyematous cavity, however, did not decrease much, if at all; the discharge decreased, the rubber drains were shortened daily, and finally it was decided to resect the ribs, which I did on January 30 of the present year, assisted by Dr. Morton.

The vertical incision was used, with sliding of the integuments to either side to secure room for the resection; a portion of three ribs was removed in a triangular manner with the base down.

The child bore the operation well, reacted nicely, but died within a week from the prolonged drain and exhaustion incident to so much suffering and suppuration.

An autopsy was held, assisted by Dr. Morton, and an extremely interesting specimen secured.

NOTES OF AUTOPSY ON BODY OF M. D. SIX HOURS AFTER DEATH.

Panniculus adiposus almost absent.

Thorax.—Right pleura, both visceral and reflected, is everywhere covered with recent lymph, which is also intralobular. The mediastinal space was practically obliterated through new-formed connective tissue, embedded in which was the heart with the pericardial sac adherent in places. In the region of the left ventricle was seen the (pericardial) sac which was the site of the first operation, here the pericardium was much thickened and covered by a pyogenic membrane. (See figure.)

The left lobe of the liver was adherent to the diaphragm and the diaphragm in turn adherent to the pericardium; indeed, the stomach, spleen, pancreas, and left lobe of the liver were matted together, the centre of the mass containing the spleen, which was situated in a deep sac.

The kidneys were in a condition of chronic parenchymatous inflammation.

In the light of the post-mortem knowledge it appears, then, that this case was a primary mediastino-pericarditis, which within two months was followed by a purulent pleurisy.

1, Anterior mediastinal tissues greatly thickened; 2, left lobe of liver, 3, stomach, 4, spleen (adherent to fragments of the diaphragm and all bound together in one mass); 5, the heart, with its cavities laid open, *in situ;* 6, pyo-pericardium; 7, left lung; 8, empyematous cavities, with sacculated pus cavities at 9, 10, and 11; 12, thickened pericardium.

The etiology of the case is obscure; no history of injury, exposure to cold, eruptive fevers, which Hare[1] states is an etiological factor, or, in fact, any of the so-called predisposing or exciting causes of the condition under consideration could be obtained. The tubercle bacillus was not found at any time.

It would seem, then, that the little child presented a primary inflamma-

[1] Mediastinal Disease, Fothergillian Essay, 1888.

tion of the entire anterior mediastinum, which of course included the pericardium; that my first operation was a paracentesis pericardii, followed by incision into the sac and drainage; the empyema was a concomitant through continuity and contiguity of tissue.

The literature does not present a great number of similar cases, the very able article by Rotch in Keating's "Cyclopædia" does not mention this association of disease. Ashby and Wright's "Diseases of Children" devotes some space to the symptoms and treatment of mediastinal abscess and mediastinal pericarditis.

The two cases of Ashby in the *Medical Chronicle*, 1891, vol. xv. No. 3, are typical and are very similar to the above, except that they do not appear to have been complicated by empyema, but pneumonia was present in both lungs. The post-mortem appearance in one of the cases, as regards the structures in and about the mediastinum, was almost identical with that of our case, tuberculosis was present, however. His second case had suffered from a past pleuro-pericarditis, accompanied by inflammatory mischief in the mediastinum, still earlier than this the child had suffered from an endocarditis of the mitral valve leading to thickening and adhesion; the child succumbed to a general miliary tuberculosis, and the post-mortem demonstrated the conditions as stated.

In my article in Keating's "Cyclopædia," on "Affections of the Mediastinum," vol. ii. p. 729, two cases of simple or non-suppurative mediastinitis are presented, both males, and of the same age,—ten years. One of these cases was associated with pericarditis and the other appears to have been part of a general process involving the glandular structures of the mediastinum. Both cases were fatal.

Harris (*British Medical Journal*, 1891, ii. 1263) exhibited specimens of chronic mediastino-pericarditis from a boy aged fourteen, to the Manchester Medical Society. Boy had been ill eighteen months, suffered from dyspnœa, cyanosis, distention of neck veins, but no inspiratory distention of these vessels. A marked pulsus paradoxus was present, each inspiration producing a decided diminution in the volume of the pulse.

Both pleuræ contained fluid, more marked on left side. Liver enlarged. The pleuræ were repeatedly aspirated, ascites, anasarca, and catarrhal pneumonia arose, and child died within the week.

The mediastinum contained a large mass that microscopic examination proved to be inspissated pus. The pericardium was everywhere adherent. Liver showed marked venous congestion without any periportal cirrhosis.

Eustace Smith's (*Medical Times and Gazette*, ii., 1884) case of purulent pericarditis and empyema was aged two years and five months; autopsy showed double empyema and pyo-pericardium, the sac containing half a pint of pus; no observation was apparently made of the state of the mediastinum.

Hutton exhibited before the Manchester Medical Society (*British Medi-*

cal Journal, London, 1884, p. 462) sections of the lung and liver of a boy, aged nine, who died of disease of the liver of fifteen months' standing, consequent on mediastino-pericarditis. The lung showed general increase of fibrous tissue, thickening of the walls of the bronchi, and great enlargement and pigmentation of the lymphatic glands. The liver showed great increase of fibrous tissue around the portal vessels with multiplication of the bile-ducts, and slight cirrhosis of the hepatic vessels. The intervening capillaries were so much dilated as to give the section the appearance of a blood-containing sponge.

Hudson (*Dublin Journal of the Medical Sciences,* vol. viii., 1849) has recorded an instructive case of a boy, aged twelve, in whom a friction sound, produced by emphysema of the anterior mediastinum, simulated pericarditis very closely both in its physical signs and clinical symptoms.

The abstracts of some of the medical and surgical cases treated at the General Hospital for Sick Children, Pendlebury, Manchester, England, contain several cases worthy of note in this connection; several of the cases demonstrate the connection between mediastinitis and hepatic congestion and enlargement.

The *Medical Press and Circular,* London, 1884, N. S. xxxvii. 45, contains a case of mediastinitis in a boy aged seventeen, following trauma; other cases are noted in *British Medical Journal,* 1884, i. 63, boy aged eighteen; *Boston Medical and Surgical Journal,* 1867, lxxvi., boy aged seventeen; *Medical Times,* London, 1851, N. S. ii. 609–612, boy aged fifteen; *Medical Times and Gazette,* London, 1884, ii. 539, child aged eighteen months; Ashby, a case of tuberculous mediastino-pericarditis in a boy aged two years, *British Medical Journal,* 1891, ii. 1208.

When we consider suppurative mediastinitis we find from my paper in Keating's "Cyclopædia" that while not a common affection of childhood, still that, when compared with the reported adult cases, it is not an infrequent disorder, as it occurred ten times out of sixteen cases of all ages.

The symptomatic manifestations of the various affections of the mediastinum somewhat closely resemble each other; all growths must interfere with the tissues or organs contained in one or other of the mediastinii, and evidences of pressure in either the circulatory or the respiratory apparatus are noted in almost all cases, hence dyspnœa is usually concomitant, and cyanosis is frequent.

Pain is a constant symptom, but varies in intensity; it is sometimes localized, or it may extend over the thorax, up the neck, and down one or other arm. The cervical and occipital glands may be enlarged.

In acute mediastinal abscess, frequent flushes of heat and rigors may be present; pulsation may occur. Cough is usually present; emaciation marked.

I have been unable to consult the original paper by Hutton on mediastino-pericarditis in children, St. Thomas's Hospital Reports, 1883, London, 1884, N. S. xiii. 211–220.

Our book on "Diseases of the Heart in Infancy"[1] contains the notes of a case reported by Saundby (*Edinburgh Medical Journal*, March, 1875, p. 799), of a boy aged thirteen with pericarditis, pleurisy, and lung abscess, in which aspiration was performed in the fourth interspace, and thirty ounces of pus removed, which the writer thinks probably came from pulmonary abscess; the child survived but a few hours; and Bouchard reports a case of left pleuritis and pericarditis that is worthy of attention on account of the fact, as he expresses it, that two punctures of the heart occurred without accident. The case was tapped eight times.

A RARE CASE OF FRACTURE AND DISLOCATION OF THE DORSAL VERTEBRÆ, WITH RECOVERY TO A CONSIDERABLE EXTENT; DEATH EIGHT MONTHS LATER.

BY S. D. FREEMAN, M.D.,
Smethport, Pa.,

WITH DESCRIPTION AND REMARKS

BY ROSWELL PARK, M.D.,
Professor of Surgery, University of Buffalo.

WITHIN the past few months Dr. Freeman has intrusted me with the care and description of a specimen of fracture and dislocation of the spine with such perfect osseous and almost perfect functional repair that I very gladly accede to his request and that of the editor and give it a careful description. The following is Dr. Freeman's concise report of the case:

"September 20, 1875, a middle-aged gentleman fell from a height of eighteen feet, striking on his head and shoulders, causing the injury to his lower dorsal vertebræ which is represented in the accompanying illustrations; sustaining, in other words, a fracture and dislocation of the tenth dorsal vertebra. The injury was immediately followed by paraplegia.

"I was immediately placed in charge of the patient, and after consultation with Professor E. M. Moore, then of Buffalo, now of Rochester, we placed him on a water-bed and attached a weight of seventy-five pounds to the lower extremities.

"My own suggestion had been to cut down to the point of injury and reduce the displacement, but Professor Moore counselled conservatism, therefore the weight was used and allowed to remain twelve hours. The effect of this traction was to draw the spinous process into line again with

---

[1] Diseases of the Heart in Infancy, Keating and Edwards, F. A. Davis, 1889.

the others; so much so that Professor Moore believed the displacement to have been reduced.

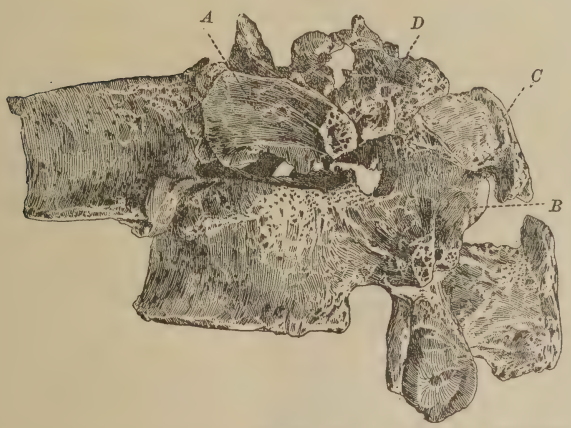
"I remained in constant attendance upon the patient until the following December (three months), closely watching the condition of the urine, and keeping it of the proper reaction. At the end of these three months he was so far recovered as to be able to wheel himself around the house in a self-propelling chair. He was passing the catheter upon himself as occasion required, and was able to direct and attend to his own business.

"After December 7 I saw him only occasionally, but instructed his attendants in testing the urinary reaction and administering the proper remedies. My instructions, however, were not carried out, and his urine became alkaline. The usual septic cysto-pyelitis resulting from this negligence was the cause of his death on May 15, 1876, eight months after injury. A post-mortem examination revealed the condition of affairs as shown by the specimen now in your possession.

"Since that time I have successfully reduced dislocation of the vertebræ by cutting down to the injured part, and then, by placing a clove-hitch around the hips and another under the arms, causing direct traction to be made, while at the same time grasping the vertebra at fault by a hurriedly-improvised instrument (which I send you by express), I was enabled to perfectly reduce the displacement without the slightest difficulty."

DESCRIPTION OF THE SPECIMEN.

FIG. 1.



A, head and neck of the tenth rib ossified in place; *B*, transverse process of eleventh vertebra; *C*, spinous process of tenth; *D*, new bone supplying defect in arch of tenth.

Fig. 1 is a lateral view of the tenth and eleventh dorsal vertebræ, which are firmly united to each other by new osseous material between the anterior upper margin of the body of the lower and the posterior lower margin of the body of the upper; also by irregular ossific masses between the anterior and posterior portions of the arch of the tenth where it had been sep-

arated; also by ossific union between the transverse processes. By these new osseous formations the two vertebræ were so welded together that separation or displacement without excessive violence would have been impossible.

FIG. 2.

A, body of the tenth vertebra seen to be overhanging *B*, body of the eleventh; *C*, portion of tenth rib.

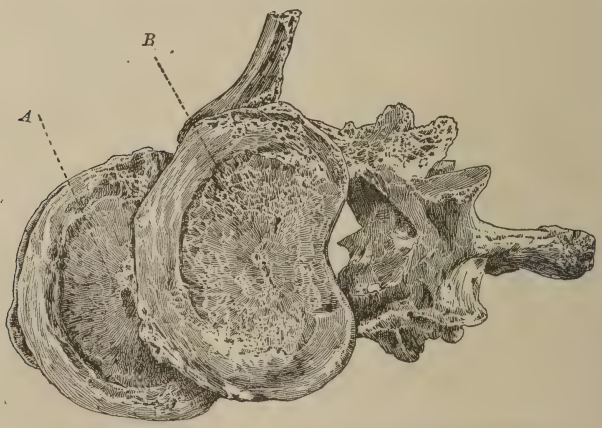
Fig. 2 is a view from the front, showing the slight amount of lateral displacement.

Fig. 3 represents the specimen as seen from below. It illustrates the patulousness of the spinal canal, though it was somewhat encroached upon.

Fig. 4 shows the forceps devised and used by Dr. Freeman in seizing a vertebra after its exposure by incision, and providing a lever by which forcible reduction might be the better accomplished.

Of the specimen it may be said, in general, that it illustrates a fracture of the arch of the tenth vertebra, through the laminæ, with displacement forward of the body, carrying with it the pedicles and superior articular processes, with subsequent complete fixation

FIG. 3.



A, *B*, bodies of the tenth and eleventh vertebræ, respectively.

FIG. 4.

Dr. Freeman's forceps.

of the parts by callus in such position that the integrity of the spinal canal was maintained and its permanency insured. The failure in complete resto-

ration of the spinal cord to its function was due to mechanical injury inflicted at the time of the accident, and infliction of a lesion of its integrity of which prompt relief of pressure did not permit of repair.

REMARKS.

An extended examination of numerous treatises, monographs, and case-reports fails to present any account of an injury similar to this, followed by recovery so nearly complete, with subsequent examination of the parts and complete description of the same. In several works are found rude diagrams or coarse wood-cuts, but none which are exact nor more than crudely suggestive. In fact, I have been unable to find—in the somewhat extensive literature at my command—any parallel case which has been reported with such a degree of completeness as this; consequently I feel indebted to the publishers for their ample illustration of Dr. Freeman's specimen.

Gurlt has reported, for instance, twenty-one cases of pseudarthrosis after fracture of the spine, and Wyman eleven more, and Gurlt and numerous others have reported cases of recovery after undoubted fracture,—which we all know not infrequently occurs,—but I have not seen figured in any work or journal, nor demonstrated in any public or private museum, a specimen of the kind which shows such an adaptation of reparative processes to functional purpose as this. It will be seen that ample room is afforded for the spinal cord, and that there is complete protection against recurrence of displacement by development of osseous tissue and the disappearance of the intervertebral disk.

Very much of what may be regarded as so fortunate about this case must be credited to the efforts made by Dr. Freeman, at the very outset, in the accomplishment of reduction, or at least of relief of cord-compression. My main object in attaching any comments to a bare description of the case is to emphasize the methods and suggestion contained in his letter quoted above. Forcible traction for the reduction of spinal dislocations is not new, nor is their operative attack, but the combination of traction continuously applied for a time, and to the degree he mentions,—*i.e.*, seventy-five pounds, —with incision and the use of local mechanical aid, or of operation and forcible traction resorted to simultaneously, if not new, has certainly not found the general favor which it deserves. It is not given honorable mention in our standard text-books, nor taught in our colleges, nor practised in our hospitals, as should be the case.

Operation dates back at least to the time of Paulus Ægineta, who advised that when other means fail we should, "if possible, extract by excision the compressing fragments." Stimson ("Dislocations"), writing in 1888 (p. 159), says, "It seems not improbable that the knife may yet be resorted to to expose the dislocated bone and enable the surgeon to act with better knowledge of the actual displacement and the difficulties to be overcome. I believe, however, that such an operation should not be done until after the soft parts have had time to recover from the laceration of the original traumatism."

In the "American Text-Book of Surgery," White, as elsewhere, advises more radical methods in dealing with the injuries of the spine, and I have for some years taught and practised them myself. But, so far as I know, the first one to practise the combination of *operative interference* and *forcible traction* upon hips and shoulders was Dr. Freeman, and I think he should have the credit for it. At all events he independently conceived the plan and has practised it successfully.

DR. DONOVAN'S REPORT FROM THE LEPERS' HOME OF JAMAICA.[1]

BY ALBERT S. ASHMEAD, M.D.,
New York.

THE Jamaica (West India) *Gazette* brought, September 15, 1892, a report of Dr. Justin F. Donovan, the medical attendant of the Lepers' Home of Jamaica, of which I give here the substance.

The number of cases of lepers treated in the Institute during the last year was as follows: On the 1st of April, 1891, there were one hundred inmates in the Home,—sixty-eight males, thirty-two females. Of this number, ninety-six were creoles and four coolies; eighty-six were afflicted with leprosy, two with elephantiasis, and twelve with frambœsia.

On the 31st of March, 1892, there were one hundred and six inmates in the Home,—viz., one hundred and one lepers, elephantiasis two, frambœsia three.

Fifteen deaths from leprosy occurred during the year. Of this number, ten had resided in the institution for periods ranging from one to twelve months, one for a year and a half, and one each for two, three, five, and nine years.

Three different treatments were tried,—the Koch tuberculin, the creolin, and the gurjun balsam and carbolic oil inunction treatment. The first was continued for three months in three cases of advanced disease. Nine months after the last injection, at the time of the report, the writer declares the influence of this treatment to be of a negative character.

I may as well describe in a few words this mode of treatment. One milligramme of Koch's tuberculin was injected, and the doses increased gradually to seven milligrammes. The injections were made into tubercular nodules, forty on each patient. They were followed by reactions, the ther-

---

[1] Communicated to the Sei-I-Kwai by Albert S. Ashmead, M.D., New York.

mometer registering sometimes 103.5° and 104.5°. An increase in weight was about the only result. After a time the toleration of the agent was established, and the systemic reaction ceased to appear.

The creolin treatment was employed in nine cases, and lasted from three to seven months. From two to three minims were given at a dose, and inunctions made thrice daily with gurjun liniment or carbolic oil ointment. No curative effects could be claimed.

The gurjun balsam treatment was used in six cases, and continued from one to four months. Doses of two or three grains were given thrice daily, and inunctions made locally. In one case only improvement was noted, by the infrequency of attacks of leprotic fever; the other cases remained *in statu quo*.

The conditions of leprosy in the island of Jamaica are very similar to those existing in the Japanese islands. Dr. Donovan believes in the contagiousness of leprosy,—that is, in its capability of being communicated from the diseased to the healthy body under conditions still unknown. As a consequence, he thinks isolation is the most effective means of stamping out the disease wherever it is endemic. I quote now the writer in his own words: "In any case, even if we reject the theory of contagion, there will always remain a grave doubt on the subject in the minds of many; and as nowadays the belief in the cause of the disease being due to the presence of a bacillus in the system is almost universally admitted (the consensus of medical opinion being of that mind), it follows that the organism must find an entrance into the body from the outward world, either through the media of food (including water), of air, through some intermediary host, as the mosquito, fly, etc., or directly or indirectly from some infected person. Such being the case, the advisability of adopting the principle of segregation becomes obvious, as each person afflicted with leprosy may possibly become a *focus* for spreading the bacilli or spores (?) in his midst, and if a vagrant leper, of course the necessity for segregation becomes still more plain.

"Legislative authority has already sanctioned the arrest of vagrant lepers (Law 17 of 1879); but in addition to the very limited scope of this law, which only gives power to detain that class of persons for four weeks at the Lepers' Home, it would be desirable to have enacted that all such vagrant and destitute lepers should be sent to this institution and detained here until medical sanction is granted for their discharge. This view will, doubtless, meet with opposition from some, but already the public sanction in civilized states has been given to enactments for the isolation of persons suffering from cholera, yellow fever, small-pox, and other contagious and virulent diseases, and their detention till they are cured; besides, lunatics are kept apart from the community for the public weal and their own safety and comfort.

"In many countries where leprosy is indigenous much more stringent enactments are in operation to enforce segregation than obtain here. At

present mendicant lepers can come and go from this institution as they please, and naturally resent any disciplinary restrictions, even regulations made for their medical treatment, and there is consequently very often great difficulty experienced in getting such a class to submit to any treatment.

"Segregation may be carried out with a twofold object: (*a*) for the purpose of preventing the spread of infection by reducing the number of *foci* of the disease; (*b*) for the benefit of the pauper leper by increasing his comfort, alleviating his sufferings, and possibly arresting for a time or even curing his malady.

"For the well-to-do class, whose friends are willing and capable of caring for them, the system of medical inspection which is in vogue in Norway, and which appears to work well and satisfy the requirements of the Physician-General of Leprosy (Dr. Hansen), a very pronounced contagionist, might be adopted. In an interesting report he says, 'In Norway the poor in the country are provided for by wandering from farm to farm for entertainment, and it often happened that lepers were provided for in this way. This has been put a stop to; poor lepers who cannot provide for themselves are now obliged to enter the asylums.

"'Though the disease was steadily diminishing, I found that something ought to be done to check the spread of the disease in the country, besides what might be done by the entrance of lepers into our asylums. In consequence, I proposed a law which was enacted in 1885. This law gives the Sanitary Commission or Board of Health in each district the right to order a leper, if he will live at home, that he must have his own room, at least his own bed, that his clothes ought to be washed separately, that he must have his own eating apparatus, spoon, fork, knife, etc.. If he cannot or will not comply with this regimen, he is obliged to enter an asylum.'

"In dealing with such a matter, where the liberty of the subject is at stake, there ought to be no arbitrary attempt at compulsory segregation. The rights of the leper as a citizen must not be ignored, and whenever an individual is able to provide for himself, or his friends are willing to look after him on the lines laid down by the Norwegian enactment, there ought to be no objection raised to such a compromise. As Dr. Hansen remarks, 'This is a very rational, humane, and democratic way of dealing with the disease.'

"But, on the other hand, where a community is exposed to possible infection from vagrant lepers, who are unable to care for themselves or provide for their own maintenance, and whose presence is a constant menace to the public health, there ought to be no half-way measures adopted. Since the discovery of the bacillus of leprosy, we must acknowledge that this organism, like others of a like character, may be found in the air, or soil, or water, or food, and every source of contamination should, therefore, be avoided.

"I am of opinion that the only rational and satisfactory way of dealing with the disease, with the object of eradicating it until a specific for its cure

is discovered, is to isolate lepers, and also to have a prohibitive act passed against lepers engaging in any of the following avocations or pursuits: (*a*) baker, barber, butcher, cigar-maker, confectioner, dairyman, fisherman, school-master, seamstress, tailor, washerwoman, water-carrier, or kindred trades or occupations; (*b*) in the preparation or sale of any article of food or clothing; (*c*) against their frequenting public places, such as chapels, churches, markets, schools, theatres, etc.; (*d*) in using public vehicles, such as trains, tram-cars, etc.

"It would be advisable to have a register kept of all lepers, and also that those who are segregated in private life should be under medical surveillance, so that there would be a guarantee that the provisions of the act are carried out."

In eight cases discharged from the Home in the years 1891–92 there was no hereditary history. In the fifteen cases who died in the same year there were but two records of possible heredity, in one case the maternal grandfather having died of leprosy; in the other, the father. In the thirty-nine cases of admissions there were eight cases of possible heredity. The disease broke out at or after puberty in all the cases. The numbers of black, white, brown, or mixed (color of those attacked) were about equal.

Fifty-eight per cent. of leprosy in Jamaica has appeared on clay, marl, alluvial, or black loam soil; forty-two per cent. on gravel, sand, or rock soil. Fifty-nine per cent. of the leper population use river, spring, or well water; the remaining forty-one per cent. drink tank or pond water.

Dr. Donovan is not a believer in heredity. "For," says he, "aliens coming from countries where leprosy does not exist contract the disease in leprous centres; the offspring of such people become affected; also children of natives contract the disease before their parents."

This does not agree with the opinion of the Japanese profession, nor is it elsewhere much believed in, so far as I can see. Zambaco, of Constantinople, says that he has even found children issuing from the womb of the mother affected with her disease, leprosy.

PARASITIC SKIN-DISEASES.[1]

BY HENRY W. STELWAGON, M.D., PhD.,
Clinical Professor of Dermatology in the Jefferson Medical College, etc.

TINEA TRICHOPHYTINA.

Ringworm was met with in one hundred and ninety-nine cases,—four and eight-tenths per cent. The scalp was the seat of the disease in one hundred and twenty cases, the non-hairy parts in fifty-five cases, and the bearded region in twenty-four instances. In a number of cases there were patches both upon the scalp and non-hairy regions. There was both in the aggregate and individual varieties a marked preponderance of males, one hundred and forty-three being of this sex, while there were but fifty-six females. The following table shows the ages of patients:

	General Surface.	Scalp.	Bearded Region.
Under	5 years, 3 cases.	54 cases.	
Between 5 and 10	" 18 "	56 "	
" 10 and 15	" 8 "	6 "	
" 15 and 20	" 5 "	1 "	
" 20 and 30	" 10 "		13 cases.
" 30 and 40	" 7 "		8 "
" 40 and 50	" 3 "		3 "
" 50 and 60	" 1 "		

Ringworm of the General or Non-Hairy Surface.—Of the fifty-five cases of ringworm of the general surface, thirty-nine were males and sixteen females. The disease was most common in those between the ages of five and ten years. As a rule, rarely more than two to four patches were present, but in several instances the number was as high as twelve to fifteen. All parts of the surface were apparently vulnerable, but the most common sites, in the order named, were the face, neck, and forearms. In six of the cases—all male adults—the disease was seated on the inner surface of the thighs, verging on to the scrotum, and consisted here when seen usually of one or two ring-like patches, together with a diffused sheet of inflammatory eruption with sharply-defined outlying borders, constituting the so-called eczema marginatum, or tinea cruris; the inflammation was, however, superficial in character.

Treatment was usually with one of the following applications: a carbolized boric acid lotion; sodium hyposulphite solution, a drachm to the ounce; corrosive sublimate lotion, one-half to three grains to the ounce;

[1] Notes from ten years' service (four thousand one hundred and thirty-one cases) at the Philadelphia Dispensary for Skin-Diseases.

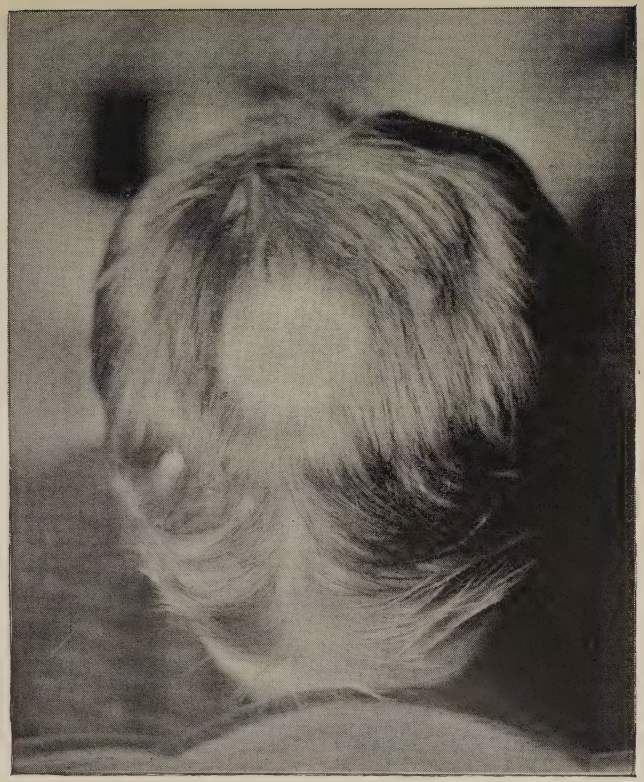


FIG. 1.—Ringworm.

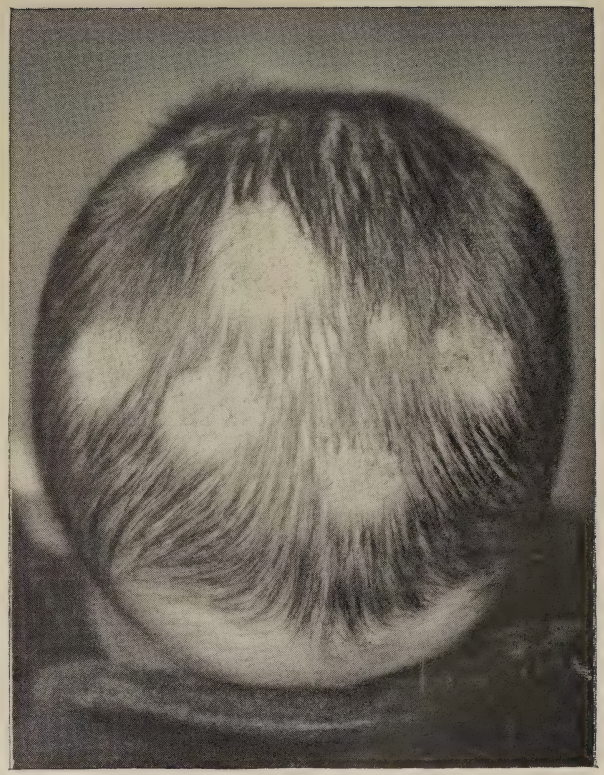


FIG. 2.—Ringworm.

mild sulphur and white precipitate ointments. In tinea cruris a thymol and boric acid lotion, an ointment of sulphur, and a paint of corrosive sublimate, made up of two to four grains of the corrosive chloride to four drachms each of the tinctures of benzoin and myrrh, were most efficacious.

Ringworm of the Scalp.—Of the one hundred and twenty cases of ringworm of the scalp, eighty were males and forty females. Of this number, only seven cases occurred in those over the age of ten years; of the seven, one was aged eleven, three aged twelve, one thirteen, two fourteen, and the oldest sixteen. In this last the disease occurred as a single well-defined patch on the vertex. Previous duration varied from several weeks to one or two years. All stages and varieties of the disease were seen, from that of the typical rounded beginning patch to those in which almost the entire scalp was more or less invaded; only one case of kerion came under notice.

The most valuable remedies were chrysarobin, five- to ten-per-cent. strength, either as a paint with collodion, or preferably as an ointment; oleate of mercury ointment, five- to twenty-five-per-cent. strength; strong sulphur ointment, with one to three drachms of a tar oil to the ounce; oil of cade, pure, or with an equal part of alcohol; a compound ointment made up of four drachms of sulphur ointment and two drachms each of citrine and tar ointments, and one-half to two drachms of carbolic acid. It was, on the whole, more the thoroughness and perseverance with which the treatment was carried out than the special remedy selected which brought about results. The spread of the disease seemed in many cases to be controlled by frequent applications of a saturated solution of boric acid containing five to fifteen grains of carbolic acid or resorcin to the ounce; and also by occasional soap and hot-water washings, with, according to the condition and sensitiveness of the skin, mild soap, sapo viridis, a good sulphur soap, or a naphthol-sulphur soap; the lather was allowed to remain on from several minutes to a half-hour. In limited cases depilation was advised, and when followed out properly it was a decided aid in the cure. In more extensive cases the hair of the whole scalp was kept closely cut or shaved.

Ringworm of the Bearded Region.—Of the twenty-four cases of this variety several were of the superficial type. The chin and adjoining part of the lower cheek were most commonly the seat of the disease; in six instances it was limited to a single quarter-dollar-sized patch, having in two or three patients a distinctly carbuncular aspect. The upper lip was affected in one case only, and in this instance in conjunction with the disease on the chin and adjacent parts. The disease was not seen before the age of twenty, and five-sixths of the cases were under the age of forty.

The most efficient remedies were lotions of sodium hyposulphite, a drachm or so to the ounce; of corrosive sublimate, one-half to three grains to the ounce; oleate of mercury ointment, ten to twenty-five-per-cent. strength; and sulphur ointments. Depilation was necessary for rapid results.

TINEA FAVOSA.

Twenty cases of favus were recorded, fifteen males and five females; the youngest patient was a girl of four and a half years, presenting three small areas on the scalp of one year's duration, and the oldest was an Englishman, aged twenty-two, in whom the whole scalp was more or less invaded, and in whom the disease had existed since childhood. In fact, in three cases in the last named, in an Irish girl, aged nineteen, and an Hungarian, aged twenty, the disease had begun in early childhood, and had therefore lasted fourteen or fifteen years. A study of the nationality is interesting, disclosing as it does but four patients of American birth; of the others, five were of German, five of Russian, two of Austrian, one of Hungarian, one of Irish, one of English, and one of Canadian birth. In two of the cases of American birth, too, the disease was not seated upon the scalp, but upon the general surface, and was of transitory character. In all except three cases the scalp was the seat of the disease. In these three, in one it consisted of a half-dollar-sized patch on the chin of a week's duration; in another a dime-sized and several close-lying pea-sized patches over the sternum of five to ten days' duration; and in the third a small patch upon the cheek of one week's duration. In these three cases the inflammatory element was quite marked; they were, however, rapidly cured by the ordinary sulphur ointment. The disease as it occurred upon the scalp was, on the contrary, exasperatingly rebellious to treatment; the most efficacious remedies were essentially those used in the treatment of ringworm of the scalp.

TINEA VERSICOLOR.

Of this vegetable parasitic disease forty-four cases (over one per cent.) came under treatment. There were twenty-seven males and seventeen females. Seven cases were seen in those under the age of twenty, the youngest being a girl of eleven years, who presented the disease covering the greater part of the upper trunk. Thirty-four of the cases were met with between the ages of twenty and forty, twenty-four of which were between twenty and thirty. In no case was the patient beyond fifty years. Previous duration varied from several months to over ten years. In one case, a woman aged twenty-eight, the disease, covering the breast and back, had recurred every summer for three years, disappearing entirely in the winter. In two cases there was concurrent syphilis, but the parasitic eruption remained undisturbed and uninfluenced. In one instance the disease was seen in a negro. In one case there was a coexistent tinea cruris. In two instances the disease occurred in two members of a family; in one, mother and daughter, and in the other, two sisters. As to extent, cases varied, most cases presenting several patches or diffused areas upon the upper breast or breast and back, while in exceptional cases the whole trunk, axillæ, arms, and crural regions were invaded. In one extreme case the trunk, lower neck, axillæ, arms, forearms, wrists, upper thighs, buttocks,

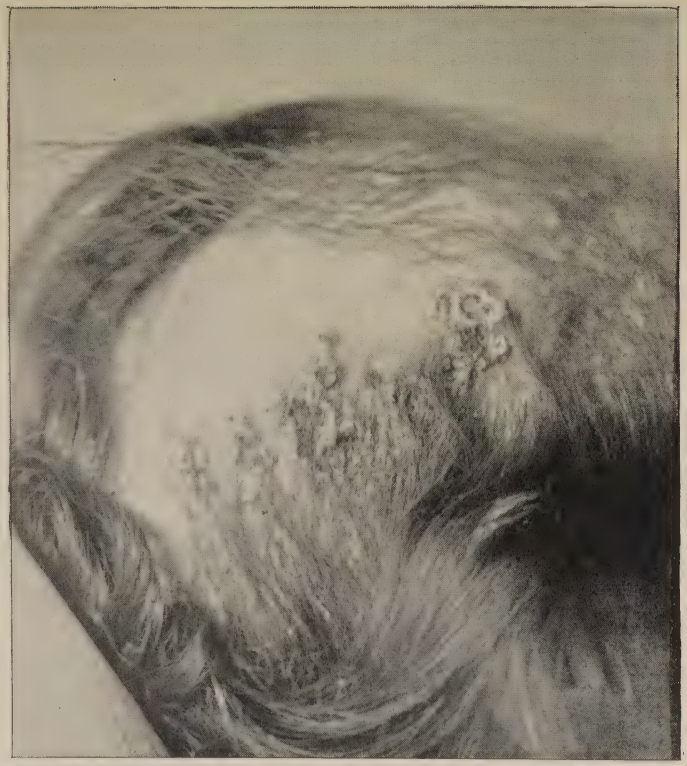


FIG. 3.—Favus, showing the cup-shaped crusts and atrophic changes.

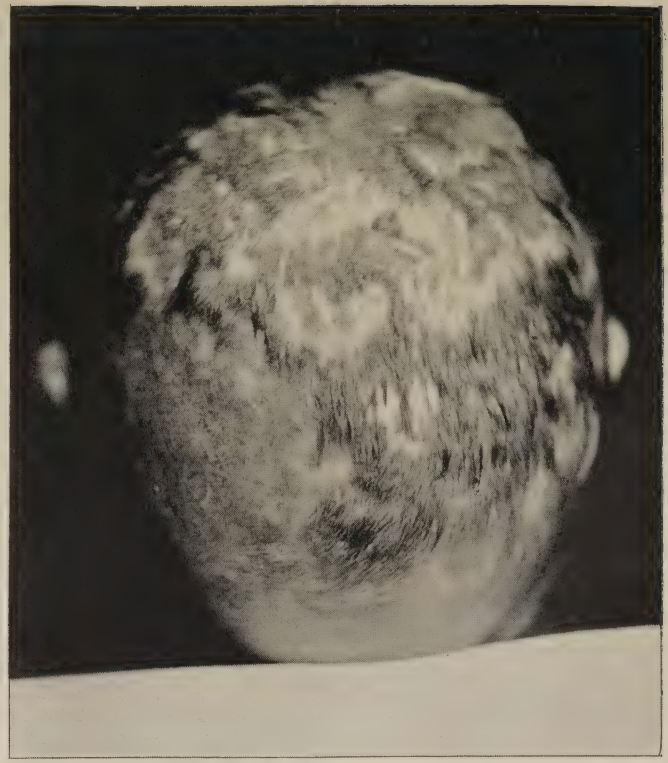


FIG. 4.—Favus, showing the atrophic and scar-like changes.

and poplitea were the seat of the eruption. In three cases, all women, the eruption spread upward well on to the lower part of the face.

The remedies most commonly employed were sodium hyposulphite lotions, ten- to twenty-per-cent. strength; resorcin lotion, ten to sixty grains to the ounce; corrosive sublimate lotion, one-half to three grains to the ounce; an ointment of sulphur, and an ointment of the oleate of mercury. Conjointly with the application selected, energetic washings with, according to circumstances, plain toilet soap, sapo viridis, sulphur soap, or a sulphur-naphthol soap were advised. An excellent and energetic medicated soap was one made up of one to two drachms of precipitated sulphur to the ounce of sapo viridis; this alone, in mild cases, not infrequently proved curative.

PEDICULOSIS.

This condition was represented by one hundred and eighty-five cases, a proportion of four and five-tenths per cent. Of these there were eighty-three cases of pediculosis capitis, ninety-seven of pediculosis corporis, and five of the pubic variety. As to sex, in the aggregate they were about evenly divided, but there was great diversity in this respect in the several varieties of the disease; thus, in the head variety there were fifteen males and sixty-eight females; in pediculosis corporis, sixty-nine males and twenty-eight females; and of the five cases of the pubic variety, all were males. A study of age, as related to variety, disclosed the following:

	Head.	Body.	Pubes.
Under	5 years, 13 cases.		
Between	5 and 10 " 34 "	2 cases.	
"	10 and 15 " 28 "	1 "	
"	15 and 20 " 5 "	3 "	
"	20 and 30 " 2 "	26 "	3 cases.
"	30 and 40 " 2 "	17 "	2 "
"	40 and 50 " 1 "	17 "	
"	50 and 60 "	15 "	
Over	60 "	16 "	

Another fact of interest disclosed was that a large proportion—sixty-eight cases—were of foreign birth, many of recent immigration. Season evidently had an influence, for whereas during the cold months between October and April, when huddling together and infrequent washing prevail, one hundred and eleven of the cases were recorded, while in the other months, when crowding is apt to be avoided and ablutions of greater frequency, but seventy-four cases came under notice.

The treatment of head-lousiness usually consisted in applications of either strong carbolic acid lotions, white precipitate ointments, oleate of mercury ointments, β-naphthol ointments, or crude petroleum; subsequently or concurrently, frequent washings with alkaline lotions or vinegar or dilute acetic acid, with or without a minute quantity of corrosive sublimate. In body-lousiness, baking or boiling the apparel was directed, and carbolic acid

washes prescribed; in those cases in which proper attention to the clothing was improbable, strong carbolic acid washes, ointments of sulphur, or sulphur and β-naphthol, or an ointment of stavesacre, was advised. In pediculosis pubis, oleate of mercury ointments, β-naphthol ointments, weak washes of corrosive sublimate and water, or dilute acetic acid were variously advised.

SCABIES.

Of this disease three hundred and seventy-two cases—nine per cent.—were met with. In the first few years covered by this report this disease was rather infrequent, but during the later period it became one of the most common. For instance, dividing these cases into five hundreds,—in the first five hundred, thirteen cases; in the second, eleven cases; in the third, twenty-four cases; in the fourth, twenty-eight cases; in the fifth, seventy-eight cases; in the sixth, sixty-seven cases; in the seventh, sixty-four cases; in the eighth, fifty-six cases. This number, too, is merely representative of a much larger total, inasmuch as a single patient often represented a family of several or more persons, only such as actually presented themselves at the dispensary being recorded. As regards nationality, in the first half of the cases appeared only three patients outside of American, Irish, English, and German birth; while in the second half there was a large sprinkling of Italians, Russians, Hungarians, and Poles. In a number of instances the disease was contracted on shipboard; and in many, also, its spread in a family could be distinctly traced to the return of a child or infant who had been temporarily placed in a "home" or "asylum." In fact, this latter may truly be said to be a prolific propagating centre for the disease. The disease was much more frequently met with in the cold season, and this doubtless was due to crowding or closer contact in beds and less frequent ablutions. The record shows that between October and April two hundred and forty-seven cases were observed, whereas during the warm months but one hundred and twenty-seven cases came under observation. Age probably exercises but little influence, except so far as at certain ages one is more frequently exposed to contagion. Thus, between the ages of fifteen and thirty the greatest number were seen,—one hundred and seventy-one; although in the first fifteen years of life the number was not small,—one hundred and twenty-three cases.

As to treatment, with some few exceptions a routine plan was adopted, modified somewhat by age. Thus, in children under the age of five years, an ointment consisting of a half-drachm of sulphur, a drachm of balsam of Peru, to the ounce, was prescribed; to those over this age and under fifteen, and also in adults of irritable skin, the proportion of sulphur was increased to a drachm or a drachm and a half; to those over the age of fifteen, an ointment consisting of sulphur, two to three drachms, balsam of Peru, a drachm, fifteen to thirty grains of β-naphthol, to the ounce, was directed. A preliminary bath of hot water and soap was ordered, and six applica-

tions of the prescribed ointment, at twelve-hour intervals, made thoroughly to the entire surface below the chin line; a half-day or a day after the last application another bath was advised and a complete change of linen. In the better class of patients this one course sufficed; in others less careful or less thorough, one or two abbreviated repetitions, at the end of a week or ten days, were found necessary. In the less cleanly class, also, in addition to the ointment, a powder of sulphur was given for sprinkling in the beds, etc. In those cases in which the eczematous irritation persisted after there was every reason to believe that the scabies itself had been cured, a lotion of a saturated solution of boric acid, with one to three drachms of carbolic acid to the pint, to which were added a drachm of glycerin and a half-ounce of alcohol, had a happy effect.

HEMORRHAGE FROM THE FEMALE GENITAL TRACT; ITS CAUSES AND TREATMENT.[1]

BY E. E. MONTGOMERY, M.D.,

Professor of Clinical Gynæcology, Jefferson Medical College; Obstetrician to Philadelphia Hospital; Gynæcologist to St. Joseph's Hospital.

In debating upon a subject to present for your consideration, it has seemed to me there is no one more prolific of interest and importance to the general practitioner than the title I now present. I am thankful that we are not called upon so frequently to treat cases that have been kept under observation by the general practitioner for a number of months, or even years, for supposed change of life, when the hemorrhage was due to the presence of malignant degeneration of the uterus, yet such patients are still too frequently treated for a length of time for ulceration and other conditions, and their subsequent safety thus imperilled. The consideration of this subject of hemorrhage more directly affects the woman after the occurrence of puberty. Prior to that epoch in the woman's life hemorrhage is of rare occurrence, and only the result of injury or of some organic disease of other organs which lead to obstructed circulation. The amount of blood lost which may be denominated a hemorrhage will vary greatly in different individuals; thus patients will not unfrequently apply for treatment where the discharge is simply a trace of blood occurring at intervals after exercise or undue exertion. It may be the result of a granular condition of the vaginal mucous membrane or of points upon the vagina, upon the vestibule, or about the orifice of the urethra. A few drops of blood may be lost or discharged after the evacuation of the urine, and may take place from the

[1] Delivered before an association of Delaware physicians.

canal of the urethra. A patient suffering from bleeding from any of these causes, applying to a physician who is in the habit of attributing every discharge to the uterus itself, will probably be subjected to uterine treatment for a considerable length of time without any benefit, if not, indeed, with aggravation. Such cases illustrate the importance of accurate and careful investigation of every patient applying to a physician for treatment.

Examination of a patient should be of such a character as to preclude the possibility of overlooking diseased conditions about the urethra, the vestibule, or the canal of the vagina. The treatment of such cases is necessarily simple. Applications made directly to the affected surface of astringents, or remedies of a limited caustic character, will bring about a changed condition of the mucous membrane and relief of the unpleasant symptoms. Probably one of the most frequent causes of hemorrhage in the early life of the individual will be hyperæmia of the ovaries. This condition may result from undue exposure at or near the menstrual period, to erotic excitement, or imperfect development of the ovaries. It is likely to manifest itself in the very beginning of the menstruation; indeed, the first menstrual period may be attended with a severe hemorrhage, which may increase at each subsequent period. The patient may become anæmic from the loss of blood, and the anæmia react upon the blood condition, increasing the tendency to hemorrhage.

Patients suffering from ovarian hyperæmia complain of a great deal of distress during the menstrual intervals, while the period itself is free from pain, but accompanied with marked depression, lassitude, and loss of strength as a result of the hemorrhage. The tendency of the physician in the treatment of such a patient, not unfrequently, is to meet the symptom of anæmia by the administration of iron in large doses. This plan of treatment, however, is very unsatisfactory, as it only aggravates the hemorrhagic tendency. Iron should not be administered in cases of ovarian hyperæmia until the hemorrhagic tendency has been arrested. The better plan of treatment in such patients is the administration of ergot for a few days prior to the menstruation; the application of counter-irritants over the ovarian region during the menstrual intervals; the administration of tissue-forming remedies, such as the hypophosphites; and with the latter may be very judiciously combined one of the bitter tonics. A good preparation is: tr. cinchon. comp., f℥iii; syr. hypophosphit. comp., f℥v, giving a tablespoonful of this mixture three or four times in the twenty-four hours. The bowels should be carefully regulated, the patient relieved from all sources of mental anxiety, removed from school, the use of the piano or practising music absolutely interdicted, all exciting literature avoided, plenty of out-door exercise directed, as horseback-riding, sea-bathing, and pleasant company, from which proper members of the other sex should not be excluded.

After one or two periods have passed without hemorrhage iron may be administered with advantage. Another cause of hemorrhage in which the ovaries are the seat of trouble arises from cystic degeneration of these

organs. Prolonged and persistent menstruation may result from irritation due to cystic degeneration of the ovaries. Such patients are not unfrequently subjected to the use of the curette, and the internal administration of various remedies with a view to controlling hemorrhage, dilatation of the uterus and exploration of its cavity, all without avail. Indeed, hemorrhage due to such a cause is only relieved by removal of the offending members. While considering conditions outside of the uterus which may give rise to hemorrhage, it should not be forgotten that it may result from constitutional disorders; thus hemorrhage is not an unfrequent symptom of obstructed portal circulation, valvular disease of the heart, and Bright's disease. It is a very frequent accompaniment of the early stages of the zymotic fevers. I well remember in my earlier experience getting ready to treat a patient for uterine hemorrhage who was in the first stages of typhoid fever. The occurrence of such complications should direct our attention to the importance of studying carefully every individual patient to determine the actual significance of this symptom. Within the pelvis the hemorrhage may result from inflammation which has originated possibly in the uterus and subsequently extended to the tubes and cellular tissue. The obstructed circulation resulting therefrom could give rise to passive congestion of a portion of the mucous membrane of the uterus and resulting hemorrhage. It still remains true, however, that hemorrhage from the uterus in the majority of cases is occasioned by disease within the organ. Uterine hemorrhage may take place from inflammation in the endometrium, known as hemorrhagic endometritis; from growths developing in the walls of the uterus and subsequently projecting into its cavity, denominated submucous growths; from retained portions of the placenta or decidua following pregnancy or interruptions of gestation; from separation of a portion of the fœtal envelopes during the progress of pregnancy; from an unfortunate situation or attachment of the placenta, as in placenta prævia; from malignant disease of either the cervix or the mucous membrane of the body of the organ.

The enumeration of these various causes of hemorrhage demonstrates the frequent difficulty in determining in any individual case the particular cause which may give rise to this symptom. Many of the causes, however, we might be able to exclude by processes of elimination. Thus, in hemorrhage arising from threatened abortion or retained portions of the placenta, the history will have much significance. In retained portions of the embryonal products, the history of previous labor or of abortion will be significant. In fibroid growths of some size, the change in the size of the organ would lead us to a supposition as to the probable cause. There still remain, however, a large class of cases in which the diagnosis is necessarily a difficult one. We may possibly be able to exclude the probability of malignant disease in considering the age of the patient. It should be remembered that malignant disease occurs in the great majority of patients in the later periods of the menstrual life or after its cessation. In a still larger majority of cases the portion of the uterus involved is the cervix, so

that the diseased processes may be examined by sight, by the use of the speculum, and where there is reason for doubt, portions of the diseased tissue may be excised and subjected to microscopical examination. We cannot, however, exclude malignant disease from age, for while it is true that it occurs in the majority of cases near or following the climacteric, yet not unfrequently the disease is found in young women; I have seen a woman in the Philadelphia Hospital dying at twenty years of age of cancer of the uterus.

I but recently operated upon a woman thirty years of age, removing the uterus for extensive epithelioma of the cervix. She had been treated for a length of time, supposing the disease of the cervix was ulceration. In those patients in whom hemorrhage takes place, whether frequently recurring or prolonged menstruation, I should urge it as an indication for a careful examination of the patient. If the condition should not be determined by the touch and the use of the speculum, the cavity of the uterus should be explored by dilatation and the use of the curette. If the symptoms are still unsatisfactory, dilatation with the finger should be done until the fundus can be reached. I cannot better emphasize this advice than by the delineation of a number of cases.

A woman, forty-three years of age, single, a domestic, came under my observation some years ago, suffering from profuse hemorrhage attended with pain. She had been treated for two years for supposed change of life. Upon examination I found the uterus retroverted, the fundus of the organ somewhat large, but was unable to determine anything further by mere vaginal examination. The patient was weak, had lost flesh, presented a straw color, and altogether led me, considering her age, to fear that she had malignant disease of the uterus. I suggested that the organ should be dilated with a view of determining the extent of the disease. Upon dilating the uterus until the finger could be introduced, there was found to be a sessile fibroid involving the posterior wall of the organ, from the internal os to the fundus. This growth was subsequently enucleated and delivered, presenting a mass nearly the size of an orange.

The second case, a married woman, forty years of age, had never given birth to children, although she had been twice informed by her physician that a miscarriage had occurred. She was suffering from catarrhal endometritis, the whole external surface being inflamed. Her menstrual periods were always prolonged, quite profuse, were irregular, and during the intervals there was a quite thick, greenish-yellow plug of discharge filling up the cervix. During the two years she was under my observation she was repeatedly urged to have the uterus dilated with a view to curetting its cavity, and in this way bringing about the removal of the diseased tissue from which hemorrhage was occurring. It was only within the last two weeks that she submitted to this operation. The uterus was dilated by graduated bougies and the curette introduced. In moving this instrument about, it was found to move over some body within the uterus, when it was

realized that it was necessary to still further explore the cavity of the organ to determine the character of the body occupying it. The uterus was thoroughly dilated by the finger, when a growth the size of a walnut was found situated at the fundus. It was enucleated as far as possible with the finger, then seized with forceps, and after considerable difficulty the cervix sufficiently dilated to permit of its delivery.

Another case came under my observation with which I have no reason to feel so well satisfied. She was a woman forty-five years of age, who had had two children. She suffered from hemorrhage of an irregular character, quite profuse and attended with considerable pain. Upon examination the cervix was found healthy, the body of the organ was somewhat enlarged; the introduction of the sound was attended with immediate and profuse bleeding. The diagnosis of cancer of the body of the organ was made and the patient advised to undergo an operation for the removal of the uterus. The operation was done, and upon subsequent examination of the uterus there was found within its cavity a fibroid the size of a marble, which had given rise to the hemorrhage. There were a number of other fibroids in the wall of the organ, which subsequent to the recovery of the patient reconciled me to the critical operation which she had undergone. In cases, then, of doubt, dilatation of the uterus, with curetting of its cavity, will remove the causes if due to hemorrhagic endometritis or small polypoid growths of the mucous membrane, and will complete our diagnosis in cases of fibroid, sarcoma, or cancer of the body. This operation of dilatation and curetting, however, is not one which should be lightly entered upon. The patient should be prepared for the operation by previous rest in bed, by emptying the alimentary canal, by as thorough disinfection of the genital tract as it is possible to secure. This should not be obtained merely by vaginal injections, but, after anæsthetization of the patient, the vulva and the vagina should be thoroughly scrubbed with a solution of green soap and ten per cent. of creolin. This scrubbing should be done with a brush, so that any material in the folds of the plicæ of the vagina will be certainly removed. The cavity of the cervix should also be cleansed before an instrument is passed through it into the uterus itself. After the dilatation of the uterus the curette should be used, and then the cavity thoroughly irrigated with either an acid sublimate or peroxide of hydrogen solution. If the condition is one of endometritis, the patient will be benefited by the introduction of a gauze tampon carried to the fundus of the uterus, which acts as an efficient drain, keeps the surfaces apart, prevents the multiplication of germs which are possibly already in the cavity of the cervix, and by its stimulating action increases the rapidity of the circulation and causes a decrease in the size of the uterus. If it has been necessary to enucleate a fibroid within the cavity of the organ, the precautions we have already designated are still important, and the cavity of the uterus, subsequent to the performance of the operation, should be thoroughly packed with the gauze, permitting the organ to contract upon its contents, and thus prevent

the accumulation and retention within it of blood, which may be a source for the development and nutrition of large colonies of germs.

I have seen a number of cases in which septic conditions have subsequently resulted, the patient had either lost her health or undergone a prolonged convalescence, when all unpleasant symptoms might have been avoided. Where hemorrhage arises as a result of malignant disease, whether of the cervix or of the body of the organ, the only justifiable plan of procedure in my judgment is removal of the uterus. This, of course, applies to those cases in which the disease is still limited to the organ. If there is indication of extension of the disease into the broad ligaments, or beyond the uterus, no operation of such a grave character should be done. Secondary hemorrhage following parturition is due either to retention of portions of the placenta or to retro-displacements of the uterus. In retro-displacements of the organ, the mere replacement of the uterus and its maintenance by the use of a proper pessary will serve to relieve the condition. In retention of portions of the placenta, it goes without saying that the offending mass should be removed.

I shall not take up your time with the consideration of the treatment of hemorrhage induced by threatened abortion. Where the condition is the result of placenta prævia, and occurs sufficiently early in the case to render it evident that it has a central attachment of the placenta, the danger to both mother and child is of such a character as to amply justify the sacrifice of the chances of the child in order to insure the mother's recovery. I cannot imagine a more uncomfortable position, a greater responsibility, than to assume the management and care of a patient with established placenta prævia, in whom a hemorrhage may take place at any moment of so grave a character as to endanger her life before a physican can be secured. I cannot feel that the slight chance of the child for life in such an instance justifies the great peril to which the woman is necessarily subjected.

The proper plan of treatment, in such cases, by all means should be that recommended by Wyder, of dilating the uterus, and version by Braxton Hicks's method, drawing the limbs into the cervix, which will dilate it and at the same time, by their compression, arrest hemorrhage. Such a plan of procedure also decreases the danger to the patient from sepsis during convalescence.

SUBJECTIVE ALTERATION OF THE PITCH OF SOUNDS IN THE PARTIALLY DEAF.

BY E. B. GLEASON, M.D.,

Surgeon in Charge of the Nose, Throat, and Ear Department of the Northern Dispensary, Philadelphia.

SUBJECTIVE alteration of the pitch of sounds as heard by the partially deaf is a matter of sufficient interest to render the observations made upon four such cases during the past year (1891–1892) worthy of record.

Subjective alterations of the pitch of sounds undoubtedly occur not infrequently as the result of disease of the middle ear; but except in the case of musicians, and where only one ear is affected, the matter usually escapes notice, because it is often a symptom occasioning little, if any, annoyance. For several years I have been in the habit, when testing the acuteness of hearing of patients who heard better with one of their ears, of asking them if there was any apparent difference in the pitch of the note emitted by a tuning-fork when sounded before first one ear and then the other. Among the numerous individuals of whom this question was asked, there were but few that possessed any knowledge whatsoever of acoustics, and their ideas as to the pitch of musical sounds were so vague as to render their answers to my questions open to the suspicion that they had confused the loudness of a tone with its pitch, and hence thought that the note of the fork was higher pitched when sounded before their better ear, simply because it was heard louder and more distinctly. Yet, in spite of this suspicion, I gradually formed the opinion that probably in most cases of partial deafness due to disease of the middle ear, not only was the loudness and distinctness of sounds impaired, but that their pitch was also apparently altered. Whilst this opinion, so formed, seemed probable in view of the observations of Burnett,[1] Sauvages,[2] Itard von Gumpert,[2] Von Troeltsch,[2] Politzer,[2] Von Wiltich,[2] Home,[2] Moss,[2] Gruber,[3] Knapp,[4] Helmholtz,[4] Bressler,[4] F. A. Spalding,[4] H. Steinbrugge,[4] and Pomeroy,[5] yet it was difficult to satisfy myself entirely as regards the matter by observations on my own patients. Even in amateur musicians, with only one ear diseased, I was often led to the conclusion that their answers to my questions in regard to the subjective alteration in the pitch of sounds heard with their defective ear were oftener inspired by a desire to please me rather than the intention to be entirely accurate.

[1] Treatise on the Ear.

[2] Treatise on the Ear, pp. 354–357.

[3] Quoted by Burnett and Gruber.

[4] Diseases of the Ear, pp. 137–140.

[5] Otological Contributions, New York Medical Journal, April 18, 1885.

One such patient, a violin-player, asserted that there was an apparent difference of one or two octaves in the tone emitted by tuning-forks as heard when sounded before first one ear and then the other.

In his case the acuteness of hearing in the right ear, when tested by the voice, watch, and tuning-fork, proved to be entirely normal. The acuteness of hearing in his left ear was, as tested with the watch, scarcely $\frac{1}{36}$. His left middle ear was the seat of long-continued suppuration, whilst the auditory canal leading to it was contracted at its external orifice to a minute opening, which had, however, been dilated to a diameter of about two millimetres at the time tests were made with a large C and a small A fork. The man was a Russian Jew, with a very imperfect knowledge of English. He was slow of speech and slow to understand. Although he was accustomed to violin playing "by ear," and a man of some education, it was doubtful if sufficient dependence could be placed upon his assertions to repay frequent and careful observations with the tuning-forks.

During the month of July, 1891, Frank R., a professional violin-player, came to my office. He complained that he would be obliged to resign his position in the orchestra of one of our theatres because of an echo-like repetition of all sounds (paracusis duplicata) which he said he heard with his left ear. Whilst playing in the orchestra he heard correctly the notes of the instruments about him, but mingled with their sound he also heard the same notes somewhat prolonged and higher pitched or "sharped." It required the closest attention to play correctly, and at the end of each performance at the theatre he was utterly tired out and exhausted.

Single words addressed to him were heard double, an echo-like repetition of the word being heard in a higher key and of a different quality or timbre. The note of a large C tuning-fork held in front of the right ear was heard correctly, but when held before the left ear, its note was sharped one-fourth to one-half tone. When sounded upon a table in front of him, the note of the fork was at first heard loudly and distinctly, but gradually it faded away into a note one-half tone higher. The same condition of affairs was developed when a small A fork was substituted for the large C fork. His acuteness of hearing, as tested by the watch, was $\frac{24}{36}$ for the right ear and $\frac{1}{36}$ for the left ear. René's method yielded positive results for the right ear and negative results for the left. By Weber's method the fork was heard most distinctly in the left ear. Only a rim of membrana tympani remained in the right ear, the larger portion of the drum-head with the lower two-thirds of the malleus-handle having been destroyed by long-continued suppuration. At the time the examination was made, however, the middle ear and auditory canal were nearly dry. Suppuration was still continuing in the left ear, and a polypus the size of a No. 4 shot was attached by a somewhat thick pedicle to the mucous membrane at the posterior part of the tympanum. Very little of the drum-head remained. The mucous membrane of the tympanum was everywhere swollen and granular. The handle of the malleus was fast to the promontory.

The complete removal of the polypus from his left ear was soon followed by the disappearance of my patient's most annoying symptom, the diplocusis. As the tympanic mucous membrane assumed a more normal appearance and the discharge from the left ear diminished, the subjective alteration in the pitch of tuning-forks sounded before that ear diminished also. He had at first estimated the subjective sharping of notes as one-half tone. At the end of two weeks he thought it was a quarter tone. It finally disappeared altogether; but, as the result of taking cold, both diplocusis and subjective sharping of sounds reappeared and persisted for some days. During this relapse he estimated the subjective sharping of the sounds emitted by a large C and a small A fork when held before the left ear to be about one-sixth of a tone. As the result of treatment, the hearing in the left ear somewhat improved, being, as tested by the watch when I last saw him, $\frac{8}{36}$. It is worthy of note in this case that Mr. R. was unaware that there was a subjective alteration in the pitch of sounds heard by his left ear until his attention was directed to the subject. Echo-like repetition of all sounds and the discharge from his left ear were the conditions that induced him to seek medical assistance. Paracusis duplicata, which, as related above, disappeared soon after the complete removal of the polypus, may have been caused by its pressure on surrounding parts. Double hearing was, however, not reproduced when powdered boracic acid or a small pledget of absorbent cotton was wedged quite firmly into that part of the tympanum that the polypus had formerly occupied.

Mr. C., a professional piano-tuner, was sent to me during September, 1891, by his physician for treatment for naso-pharyngeal catarrh. His right nasal fossa was nearly occluded by a large exostosis. Hearing in the left ear was normal in all respects, whilst the acuteness of hearing for the right ear, as tested by the watch, was $\frac{10}{36}$. Its membrana tympani was somewhat indrawn at the anterior part and its lustre was somewhat duller than that of the drum-head of the left ear. Many careful examinations were made not only at Mr. C.'s first visit, but also at subsequent visits; not only with tuning-forks, but also by means of a pitch-pipe that Mr. C. had with him. As the result of these investigations, Mr. C. informed me that there was a subjective flattening of about one-eighth of a tone in all musical sounds heard with his right ear. After the removal of the nasal exostosis, hearing with the right ear became normal, and with the restoration of the normal acuteness of hearing, subjective alteration in the pitch of sounds disappeared. However, as the result of a severe attack of acute coryza, the hearing of the right ear became again impaired, and during the continuance of this attack there was also subjective flattening of the notes of tuning-forks sounded before the right ear.

During January, 1892, I attended Mr. B., a piano-manufacturer, who at that time was convalescing from a mild attack of la grippe. The nose and naso-pharynx were inflamed, the left ear was discharging a small amount of muco-pus through a small opening in the inferior quadrant of the drum-

head, whilst the membrana tympani of the right ear was congested at its periphery and about the malleus-handle, behind which there was a small ecchymosis. The acuteness of hearing was much impaired: that of the left ear, as tested with the watch, was only $\frac{1}{36}$ when I first saw him. At subsequent visits careful tests were made not only with my own forks, but with those belonging to my patient, to determine if there was any subjective alteration in the pitch of musical sounds due to the condition of his ears. As the result of these investigations, Mr. B. informed me that there was an apparent alteration of from one-sixteenth to one-eighth of a tone in the pitch of all forks that were sounded before first one ear and then the other. The sound of a vibrating tuning-fork held before the left ear was heard not only less loud than when held before the right ear, but the pitch of the note was also apparently flattened. There was, however, no subjective alteration in the timbre or character of the sound.

It is worthy of note that both the piano-tuner and the piano-manufacturer were men who prided themselves upon their ability to detect slight differences in either the character or the pitch of musical sounds. During the times that tests were being made with the tuning-forks each of them seemed as interested in the subject as myself, and I have no doubt that they used the greatest care to render their answers to my questions as accurate as possible. The difference of one-sixteenth of a tone in the pitch of musical sounds is not readily detected, except by the most skilled ear, but each of these gentlemen demonstrated that they were able to appreciate it. Neither of them was aware that there was any subjective alteration in the pitch of a sound heard with their defective ear until their attention was called to the matter. The piano-tuner told me that he was accustomed to turn his right ear, or the one in which hearing was most acute, towards the instrument that he was tuning; but did this, he thought, because hearing was more acute in that ear.

Neither the piano-tuner nor the piano-manufacturer complained at any time of autophony or diplocusis. The piano-maker was, however, much distressed by tinnitus. The annoyance was invariably relieved, for the time being, at least, by the use of Politzer's air-douche and the careful employment of Siegele's pneumatic speculum. The presence or absence of tinnitus made no difference in the subjective alteration of the pitch of musical sounds. The employment of Politzer's air-douche upon either of these patients was always followed by temporary improvement in the acuteness of hearing, but had no apparent influence upon the subjective alteration of the pitch of sounds.

Mr. S., a young man twenty-one years of age, came to me July 21, 1892, at the suggestion of his family physician. Mr. S. stated that for some days past he had been hard of hearing in his right ear, but did not think that he had caught cold. He stated that when a child at school his teacher had pulled his right ear until it bled, and that since that time he frequently suffered from a sharp pain in that ear, but was not aware that its acuteness

of hearing was at any time impaired. He stated, furthermore, that for the past week he had been unable to play upon his violin with any comfort, because the notes of his instrument seemed to lack purity of tone. Mr. S. was an enthusiastic amateur violin-player, and it was easy to discover from his conversation that the inability to practise upon his beloved instrument was a far greater source of grief to him than the slight impairment of the acuteness of hearing of his right ear. Only occasionally was there any pain in it, and that slight in character. There was no tinnitus, but the auditory canal was extremely sensitive to touch. The membrana tympani was red and swollen to an extent sufficient to obscure the outlines of the malleus-handle and short process. The mucous membrane of the nose was congested and swollen; that of the naso-pharynx redder than normal, especially about the pharyngeal openings of the Eustachian tubes, which, however, did not appear to be swollen. Indeed, both Eustachian tubes were patulous. Mr. S. stated that there was a subjective flattening of the note of a tuning-fork held before his right ear amounting to nearly a full tone. Diplocusis could not be developed.'

The case is interesting because it presented the only instance that I have observed where subjective alteration of the pitch of musical notes caused sufficient annoyance to render playing upon musical instruments disagreeable, unless this symptom was accompanied by diplocusis. The fact that the acuteness of hearing of his right ear was not greatly impaired, and that the subjective alteration of the pitch of sounds had occurred suddenly, probably explains the annoyance that it occasioned. Under treatment the subjective alteration in the pitch of sounds gradually disappeared. The drum-head assumed an almost normal appearance, the sensitiveness of the auditory canal disappeared, and the acuteness of hearing of the right ear became nearly normal. This improvement was, however, followed by a relapse, during which the acuteness of hearing of the right ear was again impaired, and subjective alteration of the pitch of tuning-forks sounded before that ear reappeared; but instead of their notes being flattened, they were, during this relapse, sharped.

This condition of affairs lasted for a week or ten days, during which the patient made almost daily visits to my office, and tests were made on these occasions with a large C and a small A fork. As the result of each investigation, Mr. S. stated that there was no doubt that the notes emitted by these forks when sounded before his right ear were sharped. The amount of sharping varied somewhat at different visits and was always less than a full tone.

THE INFLUENCE OF CLIMATE ON TEMPERAMENT.

BY J. MOUNT BLEYER, M.D.,

Laryngologist to the German West Side Clinic; Medical Editor of the Electrical Review, etc., New York City.

As plants are affected by heat and cold, so, too, is the human body. The Roman writers bear concurrent testimony that twenty centuries ago the inhabitants of Britain, Gaul, and Germany were red-haired and blue-eyed. But such a statement by the historians of to-day would not be accepted as correct. This gradual disappearance of the light complexion may be said in one sense to be due to a climatic change artificially produced. The half-starved, half-naked, and almost houseless peasant savage of the reign of Cæsar struggled in his native forest with the frigid climate. The well-fed, well-clothed, well-housed laborer of to-day is literally living in a warmer and more genial atmosphere. Glass windows, wooden floors, well-built houses, and modern improvements have done much to mitigate the inclemencies of the British climate, and have tended to give its inhabitants more of the Southern atmosphere and temperament. We find that not only has the complexion of different races changed, but the form of the skull also has become altered. Here it is necessary to remember that the skull is modelled by the brain, and not the brain by the skull. There are two typical forms of skull, the savage and the civilized, the former with its receding forehead, wide, gaping, projecting jaw, open mouth, and hair encroaching on the dominion of the brow, presenting a most forbidding aspect; while the latter, with broad, vertical forehead, expressive, intelligent eyes, and composed or compressed mouth, bears on it the stamp of an exalted and superior intellect.

We find that between these two extremes of the savage and the civilized type many intermediate forms exist, and all subject to the influence of extreme heat and extreme cold, any extreme of hardship tending to the production of the baser, a life of ease in a genial climate being particularly favorable to the nobler. And, therefore, our feelings, our modes of thought, and, consequently, our pursuits partake of the nature of the climate in which we live, its influence in the course of centuries being traceable in the construction of the brain and in rational pursuits and characteristics.

Climatic effect upon temperament is an active principle, class a reactive one. The two must not be confounded. The climate affects the temperament of all classes. The reactive principle of class tinges the climatic coloring of temperament in different ways. Its most perfect type is naturally the most cultivated class, conservative in its prejudices and prejudiced

in its conservatism. We find that it is upon this class that climate has the most powerful influence, since cultivation is little more than an exquisite impressionism or receptivity. Whether it be the Wolfinia Carinthiana or the delicate sensitive plant, it is perfect as the production of its own soil, which alone could have produced it. But as a country is better known for its common products than for its rarities, so, too, it is in the middle classes, perhaps, that climatic influences may best be studied. Free equally from the polished prejudices of centuries and the scaly limitations of a poverty-stricken heredity, here climatic influence strikes with its native force. It is observable that on the lowest classes, lacking social advantages, even natural advantages and disadvantages seem to fall with less effect than on any other class. It is, therefore, from its effect upon the mass, or middle classes, that we will judge of the just effect of climatic influence.

Environment has been justly said to temper and develop mankind. From abundant proof, we feel justified in calling climatic influence one of the strongest of that environment. It has succeeded in defining and fixing the different races of men, which we may safely enough assume in the prehistoric beginning were as one. That there have been gradual and wonderful changes of climate, and that these changes have had the effect of not only altering the races under their influence, but even of forcing some of them out of existence, we have ample proof in the discoveries of the skeletons of strange races of animals, some now extinct, in climates totally unsuited to the necessities of their natures.

The influence of climate upon the vegetable kingdom extends not only to existence and quantity, but also to quality, which is regulated by moisture and heat. We find that certain animals cannot exist in certain climates excepting under certain conditions. The growth of man is susceptible in a certain degree to the same natural laws that have produced the animal and the vegetable kingdom.

One of the strongest proofs that we find of climatic influence is in the migration of a race to a new and strikingly different climate, where the race must either conform to the necessities imposed by the new climate or in time become extinct. For instance, different climates demand different diet, different degrees of clothing, different pursuits, all of which in time bear their proper influence upon thought and feeling. In the course of centuries the race assumes new attributes, and although many of these may proceed from association with the inhabitants of the country migrated to, the effects of change demanded solely by the climate must claim the due of the alteration due to its limitations. The limitations of a region do more to influence the temperament of a tribe, its prejudices, and feelings than any other passive influence at work. Climatic influence, directing as it does the pursuits, and consequently the feelings, habits, and thoughts of men, becomes in the course of time custom, and is so inseparably woven with the effects of tradition, traces of former national characteristics, imported habits, and natural passions as for it to be impossible to discuss it

separately. Climate can scarcely be claimed to make nations or customs, but it undoubtedly limits and defines and does much to mould their characteristics.

We find that many of the old superstitions and religious rites had their source in climatic influences, the former being propitiatory sacrifices to inclement elements.

In discussing the effects of climate upon a race it is necessary to study the topographical condition of the country in which it lives, since on the topographical condition of the country depends the climate itself.

Let us take, for instance, the continent of North America, the home of prehistoric races. The portion known as the United States is said to alone possess more degrees of climate than any other country in the world. In the frequently unsettled state of America since its colonization, and owing to the continual influx of foreigners, as well as to its youthfulness in comparison with the age of other nations, climatic influence cannot be said to have had time to mould American characteristics. Nevertheless, let us see what it has done. I desire also to discuss its influence as shown in the aboriginal tribes in their purity. Upon the savages, morally and mentally uneducated, and possessing all the repulsive characteristics of savagism, climate must naturally have had less influence than upon the educated and therefore more receptive and impressionable inhabitants of the continent of the present day. But in that it directed their pursuits and governed their animal instincts, untainted by moral discipline, in precisely the same manner, with the exception of modifications and enlargements of civilization, as it does in the present day, we find by comparison that, apart from race and savage characteristics, the elements have produced wonderfully similar effects in the mental, moral, and physical characters of the uncivilized savage and the savage civilized being of the present day in the same degrees of latitude and under the same climatic environment.

In the far regions of the North, in the land of the Esquimaux, where civilization has not found it profitable to improve race conditions, the Esquimaux retains to-day all the attributes that his stubborn climate and his slight intercourse with civilization have preserved for him from the earliest historic times. He is the victim of the most inclement climate of the world. In his winter the very trees freeze at the breath of the elements. From the elements themselves he wrests his hut of snow. Fire, necessarily, he has none. Coarse food and thick furs supply warmth to his body. In winter he sleeps. In summer he wrests from the sea, the earth, and the beasts his sustenance for the year, or himself falls a victim to the needs of the brute creation. For three months of the year he lives in the full glare of the sun. For three months he sleeps in the darkness of night. For six months he dwells in a perpetual twilight. He is the white son of the North that grudgingly shelters him. But mentally and morally he is as frozen, as unfruitful as his soil. His nature vies with that of the brute creation that surrounds him. His passions are abnormal, his intellect, with

its train of art, fancy, and logic, dwarfed. He is the creature of brutal elements, and he partakes of them. His physical being is a counterpart of his mental and moral nature. Almost white, but made black by dirt; of medium stature, well-proportioned, thick-set, muscular, robust, active, with small and beautifully-shaped hands and feet, a pyramidal head, rather flat superiorly, but very fully developed posteriorly; forehead low and receding or vertical and narrow, broad, egg-shaped face, high, rounded cheek-bones, flat nose, small, oblique eyes, large mouth, regular teeth, sometimes worn to the gum from preparing hides with them; the musical and intellectual organs poorly developed, and an expression of ferocity and animalism on the face, he is not an engaging object. Such are the children of the pole, and such in the generality of their characteristics are the children of the extreme North all the world over, their natures seeming to partake of the want of receptivity and fruitfulness of their climate, their manners coarse and rude, their affections, like their intellects, dwarfed, and their passsions seeming to gain additional power from the stunted condition of the superior qualities. They are, however, hardy and active, and their women affectionate mothers and patient drudges. Of the old Indian tribes that inhabited the extreme North between Esquimaux land and Hudson Bay, the Thlinkleets seem to have been the most remarkable.

With a climate more endurable, human nature expands. The fight for life before becomes the fight for supremacy now, brute force becomes courage and endurance becomes stoicism, cruelty is an art and, by comparison, morality is encouraged. We find also that the Thlinkleets were fond of art and music and encouraged them. Their nature was coarser, more cruel, but more generous, and contained the germ of philosophy and refinement. Still farther south and west we have again an opportunity for judging the effect of climate upon the aboriginal temperament, where the Cascade Mountains, dividing the territory of the Columbians, have given to the same tribe two entirely different climates. On that of the coast side, a narrow strip of land a thousand miles long, we find the climate temperate, excessive cold being unknown, the earth warmed by Asiatic currents, well watered, fruitful, and its thick woods full of game. As a result of this environment, we find the savages indolent, but amiable, hospitable, and social. On the other hand, on the opposite side of the range we find the climate, and consequently the temperament and pursuits of the Columbians (members of the same tribe), different. A succession of fertile table-lands covers the surface, but owing to the intense dryness of the air and the higher altitude, the extremes of heat and cold are felt. Here we find the Columbians, obliged to hunt for food and clothing, active, energetic, and, prepared to fight for life, equally prepared to defend themselves.

Coming south to the United States, we find that topographically it is divided into four great systems,—the Atlantic States, the Mississippi Basin, the Western Highlands, and the Pacific Slope. But as the climate in each of these four systems differs materially in different places, it will be sufficient

for this article to refer merely to the different degrees of climate which we will introduce in the essay.

In the region traversed by the Columbia River, where the climate is pleasing but where nature forced the red-skin to industry for livelihood, we find, perhaps, the finest type of the aborigine, another argument for the fact that a temperate region is best suited to humanity, and does more to elevate human nature than that of the more northern or more southern climates. We find that the character of the Nez Perces, the Flatheads, and the Kootenais, who inhabited this region, was remarkable for its superiority to that of any of the tribes of the North or the South,—that it was, in fact, the refined type of savage nature. All of these three races are described to us in history as being comparatively moral, honest, just, and even generous, cold and reserved in general, but not without social qualities and deeply sensitive to kind or cruel treatment; not warlike, but brave in their own defence and devotedly attached to home and family; stoical under torture and cruel only to captive enemies. It is probable that the necessities enforced by their climate, which while not severe yet demanded industry for sustenance, had much to do in the cultivation of these superior qualities, giving full play to all the forces of nature, in action working off the superabundance of animal spirits and allowing little time for the cultivation of vice.

In the hot, dry climate of Central California, which is subject in winter to terrible dust-storms and where in summer from extreme drought the ground itself bursts open, the type of aborigine was of the lowest. The savage seemed to shrink into nothing, savage virtues became extinct, and savage vices assumed a still lower aspect. In the region known as the Great Basin, and lying between the eastern basin of the Sierra Nevada and the Wahsatch Mountains and inhabited by the Shoshones, the type sinks to its lowest limit. Farnham describes the inhabitants of these dry sand-hills in the following terms: "Naturally pusillanimous, weak in development, sunk below the common baser passions of the savage, more improvident than birds, more beastly than beasts, it may be possible to conceive of a lower phase of humanity, but I confess my inability to do so."

In the inclement and disagreeable climate of Nevada and Northern Utah the Snake tribe is equally debased, partly from the barren and rigorous climate, partly from their own cultivated laziness and extreme ignorance. In winter they creep into holes which they dig in the ground, and remain there in a state of semi-stupor. In spring they crawl forth on their hands and knees and feed on grass like animals until able to regain an erect position. Without clothes, with little food, and a few superstitions that take the place of religion, and with unbridled passions, yet in this savage human brute there existed one trait almost inseparable from the inhabitants of barren and inhospitable regions, the intense love of country, as it is evidenced in the Swiss, in the Highlanders, and in every civilized mountainous and barren country. So also was it a part of the aboriginal nature,—the

more savage the soil, the greater the churlish attachment to it. And these Snake brutes, as they might well be termed, have been known to pine away and die when removed from their beloved wretchedness and churlish clime to comfort and ease in more favored regions.

The Apaches, the children of Northern Texas and New Mexico, possess all the vices of the South, with its natural indolence in profitable pursuits, turning all their active forces to thieving and fighting. We find that where his climate has given the Apache sufficient food in the form of vegetables and roots, it kills in him all activity or permits it to run in a thievish and murderous bent, but makes him physically tall, well-formed, and muscular; while the Apache who is forced by his climate to hunt for a living is short, wrinkled, shrivelled, and exceedingly ugly. True to the influence of the southern climate, the Apache was traitorous, indolent, excepting in mischief, vain, passionate, quick-tempered, and readily incited to murder.

So much for climatic influences on the Indians. With the differences of education and religion, they do not differ so much from the whites of the same latitude.

Let us study in the same climates the Americans proper and contrast them slightly with Europeans in the same latitude, as well as with the aborigines, of whom we have just spoken.

First, it is necessary to make a few remarks as to the effect of temperament upon certain qualities of the mind. Climate affects, first, the body; secondly, the feelings; thirdly, the mind. The two first act upon the third, which in turn reacts upon them. We find also that the influence of the sun is the strongest, next that of moisture. As the sun ripens fruit, so does it also the human temperament. It is necessary to its perfection; and in its different degrees we trace its different workings. Where it is temperate but constant we find the best results, and therefore it is in the temperate zone that we must expect most from man. But it is upon the imaginative, artistic, and impressionable temperament that climate has its greatest effect. The sun ripens and expands these, and it is in southern climates that we must look for them. But as they are the growth of centuries, and as they are merely nourished and not made by smiling skies and fertile plains and burning rays, and as America is still too young for these, which must be to her the gift of an older civilization, this is a point which we must discuss in general, and for which we shall not be able to draw examples from America. America has nursed every temperament except the artistic.

In the extreme North the Esquimaux still reign with the pristine impurity of their manners and morals and their dull intellects, as yet unadulterated by civilization; while Lapland, in Russia, and Greenland in the same latitude offer much the same characteristics to the moralist and statistician. In the provinces of Ontario and Quebec, in latitudes about 43° to 53°, where the four seasons follow one another consecutively and evenly, and where the climate readily yields to cultivation, we find the people sober, moral, industrious, social, conservative, intelligent, sensible, affectionate, and

fond of their country. The chief pursuits as well as the amusements of the inhabitants are governed by the climate, the pursuits being almost entirely agricultural, mercantile, and mental, the amusements in summer being boating and numerous out-of-door games; in winter, snow-shoeing, skating, and tobogganing, these latter, with la-crosse playing, having been learned from the Indians. The standard of general education is higher than that of the United States. But it is in the Eastern, Western, and Southern States that we find the typical American, the product of time and peculiar national environment. Let us see how much the climate may have had to do with this.

For instance, in the Eastern States, hot in summer, cold in winter, and subject to frequent changes of temperature, but beautiful in the natural character of the soil, we find the American isolated by peculiar characteristics from his Western and Southern American brothers. The Easterner is shrewd, intelligent, attached to his hills and valleys, with commercial instincts, losing no advantage, proud of having gained one, mechanical, warm-hearted but prudent, seldom brilliant, never dull, normal, self-restraining, industrious, cautious, and suspicious. The voice is usually nasal, a fact proceeding partly from the climate which induces catarrhal troubles, partly from association. He is always a theoretical politician in his own interests. Self-interest is the mainspring of his disposition, which may be attributed to the fact that his climate forcing him to follow mechanical, mental, mercantile, or agricultural pursuits for a livelihood, also cultivates in him the faculties best calculated to preserve as well as to win them.

The Southerner, son of cloudless skies, heir to a soil unsurpassed in fertility and rich in luxurious as well as necessary products, and caressed from his infancy by perfumed zephyrs, the Southerner, favorite child of nature and undisciplined by her, upon whom every blessing of life is poured, the Southerner is perhaps the spoiled child of men,—nature supplies his every necessity, grants him every luxury. But necessity, if a stern taskmaster, is also a gracious teacher. The man who bows not to necessity has never lived, and the rude Swiss has as much to be thankful for in his mountain fastnesses as the pampered Southerner, smiling lazily from the lap of bountiful nature. The perfumed zephyrs that caress him, and the rich fruits dropping into his hands, beget what the inclemency of the temperate northern zone could not,—indolence and abnormal passions. The mind that in the medium North from exercise and deduction becomes logical and prudent here runs into the extremes of torpidity and imaginativeness, and prudence becomes an excess of generosity where generosity costs nothing. But under this Southern sky the art of manners reigns unrivalled, social distinctions cultivate the classes they divide, and chivalry is more than a name. The heart is very warm in this land of the South, but very fickle. Its passions are like its storms, they burst in a fury unknown in more temperate climes. Nothing exists in moderation. Honor is the dearest word to the heart of a Southerner. In it he reads the word life. Nature supplies him

with perpetual summer. But he is made improvident by his very blessings, and his perpetual languor and dreaminess have made him almost irresponsible in the colder and more matter-of-fact affairs of life. He lives in a dream fanned by the zephyrs of his climate, happy if no reality ever awakes him.

How different is the hardy Westerner, whom the elements of his climate and the necessities of life have taught to wrest from the earth its treasures of grain and fruit, to delve in the earth for doubtful ore, or to turn the churlishness of nature into an advantage to himself! Self-reliance, adaptability, and hardihood are three of his most notable qualities. The cyclones of his native climate have taught him to accept every emergency of life calmly, the soil has taught him that perseverance and toil conquer everything, and his associations have taught him that when a man is knocked down the only thing for him to do is to get up and go ahead again, or, in Western philosophy, when worsted by one stronger than one's self, to go to work and worst some one who is weaker. Although differing from his brother of the East in many ways, principally in sectional peculiarities, in general outlines they are much alike, both industrious, normal, intelligent, and ambitious of success. But the Easterner is shrewder and more mechanical owing to his habits of business and thought and greater intercourse with the outside world; while the Westerner is hardier from out-of-door exercise and more boldly assertive, another effect of fresh air and life under the dome of the sky. Life in the open air begets independence of spirit; it is therefore in climates where man is forced to contend with the earth for life that we find the most fearless races. Open-air life united to vigorous effort is the secret of the love of freedom which we find nearly always in rugged climes and under seemingly naturally unfavorable circumstances. We find it proved in such countries as Switzerland, Poland, and Scotland. It is the rugged virtue that rewards the discipline of climate. It is a fact that continued submission begets pusillanimity. So, free air begets love of freedom. It has been asserted by persons confined to the house for a length of time that on reaching the fresh air once more a sensation of fear overcame them, and for some time prevented their going farther. And it is stated historically that in the reign of one of the early kings who, to celebrate a great victory, ordered that all the prisoners should be set free, one of them, an old man, presented a petition to the king that he might be permitted to return to his dungeon and live out the remainder of his life there, his plea being that having been imprisoned there since the age of twenty-one years, he had become accustomed to it, and could not now endure the light of the sun, or, indeed, any change of life. The king granted his request; but the question here arises in regard to the actual influence of climate,—Is the influence of the breath of heaven less than that of prison walls?

Enough of America,—let us generalize a little. I asserted before that the influence of climate upon the artistic temperament could not be gauged

in America. Let us examine in the home of art by nature and heredity. As I said before, climate does not make; it modifies, moulds, and nourishes. The climate of Italy and that of the Southern United States are not dissimilar; but Italy possesses the artistic advantage of many centuries of culture and an ancient civilization that bowed only to that of ancient Greece. Old traditions and a history that is in itself a romance and an heredity of art have refined the sensibilities of the Italians in comparison with those of other Southern nations. It is to them what a Stradivarius is to a common violin. In the meanest Italian, poetry and song are born. The genius of art dwells in Italy, and its zephyrs blow to keep the flame of life alive, and its roses smile in her bower all the year round. But she is like the volcanoes of her land, although she seethes always, it is only two or three times in a century, perhaps, that she bursts forth and astonishes the world. But in spite of hereditary art and romantic history and superior civilization, it is the climate of Italy that has lent its sensuousness and its beauty and its clinging strength to the youthful soul of the artist. There is a tradition in certain countries that the trees and the elements have a language. And they have in the creed and to the soul of the artist. It is not a romantic theory, but a psychological fact. We find on examining the memoirs and biographies of most of the celebrated writers, poets, painters, and sculptors, that they were extremely susceptible to the influences of climate. Sir Walter Scott attributes both his excellent physical health and his literary bent to the influence of the wild and weirdly beautiful scenery of Scotland and its legendary lore. It was while Byron was visiting in Scotland in his early youth that the beauties of the scenery surrounding him, with its alternately clear and misty atmosphere, evoked from him his first poetic effusion. Shakespeare and Goethe were essentially nature's children, both being strongly susceptible to climatic influence and deeply sensible of the inspirations of outer nature. Newton was exceedingly alive to climatic influence, and Sir John Lubbock has recently published a book on physical nature as affecting the well-being of humanity. There are some natures so emotional and so keenly impressionable as to be visibly depressed or high-spirited as the day is wet or dry, dark or sunny, cold or warm.

We find that the logical and scientific inhabitants of the moderately cold zone are less subject to these changes of climate, while the people around either pole are absolutely impervious to them. To summarize, we find that the effects of climate on temperament in the medium North and in the South all the world over are as follows: In the South, desire and pursuit are one. In the North, reflection leads to action. The Southerner is improvident and procrastinating, the Northerner necessarily industrious; the Southerner usually indolent, lacking foresight and less forced to regulate his habits. The cold, bringing with it a partial cessation from labor, affords the Northerner an opportunity for forethought and reflection; and hence he acquires a habit of not acting without consideration. The Southerner is prone to act without reflection, and does not fairly weigh the consequences

of what he is about to do. The one is cautious, the other impulsive; the one a thinker, the other a dreamer; the one calculating, the other passionate; the one moderate, the other an extremist. The Northern mind, thrown back on itself for mental food, contents itself with logical deductions; the Southerner, continually under the influence of smiling skies and constantly prompted to varying thoughts, will indulge in a superfluity of ideas and deal with them all superficially; more volatile than reflective, the Southern temperament can never possess a constant love for a fixed constitution. Once resolved to act, the intention of the Northerner, sustained by reason alone, will outlast the enthusiasm of the South. In physical courage the two are equal; but the North usually prevails through its habits of labor, endurance, its methodicalness, and its unalterable perseverance. Long ago writers whose attention had been directed to the subject affirmed that the South will fight for the benefit of its leaders, while the North will fight only for the benefit of the mass. To convince the man who lives under a roof, an appeal must be made to his understanding; to convince him who lives under the sky, the appeal must be to his sensibilities.

The subject is sufficiently exhaustive to permit of more than the merely superficial study I have given here, and is deserving of the closest scrutiny of philosophers, moralists, and statisticians. Let us hope that at some time in the near future it may be the subject of a comprehensive work of some student of modes and manners.

MODERN BACTERIOLOGICAL RESEARCH IN ITS RELATIONS TO THE SURGERY OF THE GENITO-URINARY ORGANS.[1]

BY G. FRANK LYDSTON, M.D.,

Chicago,

Professor of the Surgical Diseases of the Genito-Urinary Organs and Venereal Diseases in the Chicago College of Physicians and Surgeons; Surgeon to Cook County Hospital.

One of the weaknesses of the average specialist is to claim the results of modern scientific research as more important in their relation to his own specialty than to any other part of the domain of medicine and surgery, and I must confess that the preparation of the present paper has been inspired to a certain degree by a sentiment of this kind. I will, however, endeavor not to monopolize the developments of modern research for the especial benefit of my particular line of work, but will premise my remarks by stating that,

---

[1] Read before the Southern Surgical and Gynæcological Association, November 17, 1892.

in my opinion, modern bacteriological and pathological research has nowhere been more productive of scientific and practical progress than in the special field of genito-urinary surgery. It is not my intention to attempt to present even a *résumé* of modern bacteriological research as bearing upon the micro-organisms found in the tissues and secretions—normal and pathological—of the genito-urinary apparatus in various conditions of health and disease, but to speak of a few which seem to me to be of the greatest practical value. It is not hoped that I will be able to contribute in any considerable degree to the settlement of the question as to whether, under certain circumstances, the microbial organisms which are constantly to be found in the secretions of the genito-urinary tract are causal factors in the pathogenesis of various forms; or, on the other hand, to decide the precise relation of heterogenetic organisms to the same morbid processes. The relation between the two—that is, between what may be termed the normal germ and germs of known pathogenic properties—must certainly be left to the practical microbiologist.

Under the omnibus term of "urinary infection" many diverse forms of disease of microbial origin are doubtless embraced. The present state of our knowledge does not admit of any very arbitrary differentiation between the various forms of microbial infection. Suffice it to say in a general way that there are many pathological changes and disturbances of an apparently functional character affecting the genito-urinary tract which are due, either primarily or secondarily, to microbial infection. These processes range in severity from a general infection which results in effusions and perhaps suppurations in joint-cavities to so simple a local lesion as a chronic prostatic irritation. In the one the objective signs are both striking and characteristic, while in the other there may be absolutely no objective signs. These conditions, however, are alike due directly or indirectly to microbial action. The diseases which we to-day believe to be of microbial origin were clinically as well known to the surgeons of the olden time as to those of modern days. They recognized the existence of certain suppurative conditions of the genito-urinary tract, and appreciated the relations which existed between certain inflammations of the urethra, bladder, ureter, and kidneys to each other. They were familiar with gonorrhœa, stricture, calculous affections, urinary obstructions, and suppression. The results of injury, dietetic excesses, the gouty and rheumatic diatheses, the pressure of the pregnant womb, and the action of various medicaments taken by the mouth, in the production of pathological conditions, were perfectly familiar to them. Above all causes of genito-urinary disturbance the surgeon of the past held exposure to cold and sudden changes of temperature. If we think for a moment we will appreciate the importance of the fact that all of these causes, as such, have become secondary in many instances to the action of microbes. They are no longer sufficient explanations in genito-urinary pathology. The pathologist of former days confused the *propter* and the *post* in a most peculiar fashion. The causes which he regarded as principal

and primary are now believed to be of secondary importance and merely accessories before the fact.[1]

As time went on, pathologists recognized not only local inflammations and suppurations of the genito-urinary organs, but also certain accidents of a constitutional or febrile character. These at once assumed a position of importance. It has been, however, only within the last fifty years that even our clinical knowledge of these conditions has been at all clear, and there is much confusion even now in certain quarters as to their etiology. To Velpeau and Civiale is due the credit of the original stimulus for the scientific study of these conditions. To enumerate the various authors who have studied the subject of urinary infection since the point of departure afforded by the work of Velpeau and Civiale would be wearisome; not to mention, however, the work of Hallé, Keyes, and Reginald Harrison would be unjust to those enthusiastic workers. Guyon has given a very exhaustive bibliography of this subject.[2]

As shown in the recent *résumé* by Hallé,[3] there are four principal theories of general urinary infections, the most ancient of which is the theory of phlebitis, advanced by Chassaignac and Icard in 1856. This theory implied that the serious accidents which occur in the subjects of genito-urinary disease were the result of a phlebitis of the peri-urethral erectile tissue and the veins about the prostate. This theory consequently implied that all purulent infections secondary to genito-urinary operations were of a purely vascular origin. A second theory is that of nervous shock, advanced by Perreve, Bonnet, Reybard, and others. This theory implied a marked depression of vital force due to nervous shock, the principal cause of which was a painful impression made upon the urethra. A more recent theory was that of Verneuil, and following him a number of other eminent authorities, who ascribed these various conditions to pathological conditions of the kidney. According to these authors, the kidney has been in these cases more or less disorganized and functionally aberrated by nephritis, with a resulting defective elimination of the products of retrograde tissue metamorphosis. Under the influence of reflex impressions upon the urinary apparatus the kidney becomes still further modified by the occurrence of congestion or hyperæmia. Strange to say, a fourth theory—that of Velpeau—was the first which was formulated. This author claimed that the accidents of a general character which occur in genito-urinary practice were due to the absorption of certain principles of the urine into the circulation. It is certainly a striking fact that this old-time theory was more nearly than any other in accord with modern views upon this subject. A number of Velpeau's pupils, such as Civiale and, more recently, Gosselin, believe that the urine itself is absorbed at injured or pathologically altered points in the

---

[1] T. Rovsing, Die Blasenentzundungen, Berlin, 1890.

[2] Lec. Or. Clin. Sur. les Mal. des Voies Ur.

[3] Annales des Mal. des Org. Gen. Ur., February, 1892.

mucous membrane, causing urinary infection by a pathological alteration of the blood. That such absorption is possible in pathological conditions was early shown by the experience and experiments of numerous observers.

It is interesting to know that the truth regarding urinary infection was within the grasp of these early investigators, and only escaped them because of their ignorance of bacteriology. The fact of urinary infection, then, was well known to Velpeau; the cause of the toxicity of the urine remained to be shown by modern research.

Can we, in the light of recent investigations, overthrow entirely any one of the four theories which I have enumerated? There is, it seems to me, an attempt to ignore all of them with the exception of urinary infection. This I do not believe to be logical or founded upon sound pathological knowledge. Does phlebitis ever constitute the starting-point of general infection from operations upon lesions of the genito-urinary tract? It would seem that it may do so in certain instances. It is not to be denied that septic processes of a general character may take their point of departure in phlebitis in other situations. The fault lay, as I have already remarked, not in the direction of pathological deductions, excepting in so far as the theory of phlebitis was made to apply to all genito-urinary infections of a secondary character, but in ignorance of pathogenic organisms which were the *fons origo et mali* of the phlebitis. There is hardly any question that absorption by the lymphatics bears a very important relation to the septic infection that sometimes results from genito-urinary operations. A striking analogy is found in the metro-lymphangitis which often constitutes a starting-point for general septic infection in the puerperium. Personally, I am inclined to attribute relatively greater importance to absorption by the venous channels than by the lymphatics in the case of the genito-urinary organs; still, it must be acknowledged that septic infection may take its point of departure in a septic lymphangitis. Other things being equal, it would be natural to expect absorption by the veins to result more quickly in general septic infection than in the case of absorption by the lymphatics. One point which it is well to bear in mind is the probability that absorption by means of the veins is not necessarily followed by a phlebitis. Rapid general septic intoxication with a fatal result may occur before perceptible phlebitis has had time to develop.

In considering the relation of septic absorption to the general febrile accidents of genito-urinary practice, it must be remembered that the absorptive power of the vesical mucosa is very slight, while, as experiments have shown, that of the urethral mucous membrane is very great. Absorption by the unbroken urethral mucous membrane readily occurs. Rarely, if ever, does the intact epithelium of the vesical mucosa absorb toxic or other materials even when they have remained in the interior of the bladder for a prolonged period. Can we cast aside the nervous theory of the origin of general infection from the genito-urinary tract? I do not believe that we can; for it is my humble opinion that the influence of the nervous system should

be intimately interwoven with even the theory of urinary toxæmia. We see cases of so-called urethral or urinary fever in which the point of departure is not the action of pathogenic micro-organisms, but a distinct and positive nervous shock. A case, for example, experiences a chill while undergoing the simple operation of urethral exploration, or perhaps a chill comes on a few minutes after the operation is completed. This may pass off or may be followed by a succession of chills, and may perhaps be followed by fever and sweating. Can the theory of the absorption of toxic principles from the site of the urethral lesion always explain such cases? There may be those present who believe that it can. If so, I would like a rational explanation of those cases of chill that occur in operating upon the urethra which has never been the subject of gonorrhœa, stricture, traumatism, or any variety of infection. Furthermore,—and this involves to a certain extent the theory of renal disease as an explanation of urinary fever,—case after case has been reported where a simple operation upon the urethra has been followed immediately by convulsions and death, or by suppression of urine with a fatal result at a period more or less remote from the time of operation. We must recognize, it seems to me, two possibilities: (1) The occurrence of chill due to a reflex spasm of the peripheral vessels as a consequence of operations upon the genito-urinary tract. (2) We must also recognize a similar reflex spasm followed by active hyperæmia, and finally congestion of the renal structure from similar causes. This may go on to nephritis. (3) In addition to these two conditions, I believe that we must recognize perverted tissue metabolism, with or without fever, as a result pure and simple of a reflex from the genito-urinary tract. To this I will allude again in connection with urinary infection.

Recent observations in the chemistry of the urine go far to support me in this view, in which I believe I had the honor of being a pioneer, as it was suggested in my lectures over ten years ago. Feré[1] and Voisin,[2] in a series of careful experiments, have demonstrated that a toxine is formed in the urine of epileptics during the convulsions, which, inoculated into various mammals, produces convulsions of an epileptoid character. These observations are strikingly suggestive, to say the least.

The subject of autogenesis, in its relations to the development of certain constitutional diseases, demands more attention than is usually accorded it, and it is probable that physio-chemical researches in this direction will in the future shed more light upon diseases the etiology of which is now obscure. Among the modern writers who have given considerable attention to the morbid results of perverted physiological chemistry, Benjamin Ward Richardson is perhaps the most prominent. It will be remembered that it is to the researches of this author that we are indebted for the most widely accepted and most logical theory of the pathology of rheumatism.

---

[1] Progrès Méd., October 8, 1892.

[2] Bull. Gén. de Thérap., October 15, 1892.

It is my impression that abnormal tissue metabolism is a quite logical explanation of some of the typical cases of general infection following genito-urinary operations. This perverted physio-chemism brought about by surgical shock is especially marked in the glandular tissues. We know quite well that mental emotions of various kinds, and those impressions upon the nervous system which result in the condition that we term shock, may produce marked changes in the physiological secretions of the body, these changes consisting either in an increased or diminished flow or obscure chemical changes in composition. Thus we may have through various nervous impressions an increase or decrease in the quantity of saliva, the lacteal secretion, gastro-intestinal secretion, the urine, and of the menstrual flow. A familiar illustration of the chemical effect of various emotions upon physiological secretions is the change in the quality of the lacteal secretion induced by anger or grief. This change, although occult and incapable of demonstration by microscopic or chemical research, is most pronounced in its morbid effects upon the child, cholera infantum of a most fatal character being a frequent sequel of the emotion of anger in the mother. Precisely what this change in chemical composition may be is an open question, but it is possibly a species of decomposition which results in the formation of a poison analagous to the tyrotoxicon discovered by Professor Vaughan in impure cow's milk. It is well known that great care is necessary on the part of those who supply milk for the use of infants to prevent fatigue and various sources of excitement in the cows from which it is taken. It is well known, too, that sexual excitement in the cow is productive of marked changes in the milk and renders it unfit for human food. If such change occurs in one secretion, it is highly probable all the physiological secretions are susceptible to a similar change. It is possible that in the case of the saliva the emotion of anger causes the development of toxic principles in that secretion, which may possibly explain the serious results that are so apt to ensue from the bite of an enraged human being. The difficulty of proving this theory in the present state of our knowledge of physiological chemistry is obvious. In the case of the urine the influence of surgical shock may be inferred to consist in the development in some instances of organic poison in that secretion. We may consider this to be hypothetically analogous to the ptomaines and leucomaines discovered by Selmi and Gautier in both dead and living bodies, and which so closely resemble the vegetable alkaloids nicotine, brucin, and strychnine. The impregnation, primarily of the blood and secondarily of the nervous system, by the toxine or toxines, whatever it or they may be, may possibly explain the otherwise obscure and mysterious cases of death following the simple introduction of a sound. Reginald Harrison has asserted the possibility of such a development of toxic urinary principles and consequent toxæmia from their absorption.

I would ask the distinguished gentlemen whom I have the honor of addressing if they believe that we can, after these considerations, throw over altogether the nervous theory of those serious and often fatal accidents that

follow operations upon the genito-urinary organs. Can we set aside renal disease as a factor in the general accidents that result from genito-urinary operations and disease? No one, I think, will dispute the assertion that we cannot do so. Nephritis, as a cause of the fatal result after operations upon these parts, is too well known by the practical surgeon to admit of discussion. It is the principal factor in the causation of a large proportion of cases of so-called urethral or urinary fever.

The relation of organic and functional disturbance of the kidneys to the so-called urethral fever is a most intimate one. There is probably no case of long-standing obstructive disease of the genito-urinary tract which is unaccompanied by functional aberration of the kidneys, and in a large proportion of cases there occur later on actual organic changes in the renal tissues. This condition of affairs is to be anticipated and should be given serious consideration in every case of chronic urinary disease. The immediate effects of the kidney difficulty may not be marked because of the activity of vicarious elimination by the skin and bowels, the vicarious action of these structures constituting the means by which the system accommodates itself to the imperfect elimination of the constituents of urine. When, as a consequence of operations upon the genito-urinary organs, surgical shock is produced, reflex hyperæmia of the renal tissue is quite apt to result. This causes a strain upon the circulation of the kidney, which in its impaired condition it is not able to withstand, and as a consequence its functions are completely inhibited, with resultant uræmia. To those who are familiar with the physiology of the nervous system in its more intimate relations to visceral functions, the association of renal disturbance and reflex irritation is not at all novel. In weighing this question it is necessary to take into consideration the extreme sensitiveness and the abundant sympathetic nervous supply of the genito-urinary tract.

Drs. Arnand and Butte, in a paper on Neuropathic Albuminuria presented to the Parisian Academy, called especial attention to a type of albuminuria characterized by pre-existing and existing symptoms of the viscera, innervated by the pneumogastric nerve. The irritation of the pneumogastric in these viscera is reflected *via* the vaso-motor system to the kidneys, causing albuminuria. It has been found that renal aberration is very liable to occur from operations in and about certain special regions, notably the abdomen and genito-urinary organs. The intimate relation of the sympathetic ganglia through their visceral filaments of distribution and their liberality of innervation of the genito-urinary organs with the nervous supply of these regions is an all-sufficient explanation of this fact. Nowhere are the cerebro-spinal and sympathetic systems more closely associated than in these parts. To sum up the situation by a homely illustration, it is not surprising that all operative manipulations of the genito-urinary tract are liable to concuss, so to speak, the renal nerve-supply,—*i.e.*, are likely to bring a reflex strain upon the vascular supply and secondarily upon the nutrition and function of the kidneys.

I have thus endeavored to show that, valuable as are recent discoveries of the intimate relation of pathogenic organisms to the serious secondary accidents of genito-urinary disease, we are not justified in sweeping away as if it were so much rubbish the clinical observations and pathological deductions of past generations of surgeons, whose eyes, fingers, and logical minds were so productive of valuable material that we can only regret that they were not supplemented by the modern microscope.

The theory of urinary toxæmia is unquestionably the most important of all in its bearings upon the subject of the general accidents of genito-urinary pathology and practice. It is not believed, however, that the composition of the urine *per se*, or the absorption of that fluid, has anything to do with the resulting pathological processes, but that they are invariably due to an alteration of the composition of the urine through the medium of micro-organisms of various kinds. The precise character of these micro-organisms has by no means been definitely settled. That the ordinary bacteria of decomposition have much to do with it is probably correct, and some modern researches tend to show the existence of a special type of micro-organism in decomposing urine. The particular product of urinary decomposition which possesses general pathogenic properties has elicited much discussion. We no longer believe that it is the ammonia developed in decomposing urine which produces general toxæmia. That it may produce local pathological changes within certain limits is probable, but only in so far as it acts as an irritant of greater or lesser strength. We have not yet arrived at the point when we can positively state that any particular chemical compound is the cause of the toxæmic conditions resulting from genito-urinary disease, injury, or operation, but we are warranted, I think, in assuming that such compounds are the principal etiological factors in such conditions; and reasoning by analogy, we are, it seems to me, safe in the inference that they are similar to, if not identical with, the ptomaines and leucomaines of which we hear so much at the present time. The function, then, of microbial organisms in toxæmias of genito-urinary origin would seem to be of an indirect character, it being the products of the micro-organisms, and not the germs *per se*, that produce the difficulty. But there are, of course, cases of general infection that are unquestionably due to special types of micro-organisms, ordinary pyogenic microbes playing an important *rôle*. Regarding the presence of a specific type of micro-organism as a cause of urinary infection, a number of varieties of microbes have been observed by various investigators in pathological urine and in surgical lesions of the kidneys.

It is not surprising that the great pioneer in bacteriology, Pasteur, should have suspected the truth regarding urinary infection over twenty years ago. As early as 1875 he publicly expressed the opinion that pathogenic microbes accidentally introduced into the bladder were the cause of urinary infection. In a discussion at the Parisian Academy, he said at that time, "If I had the honor to be a surgeon, I would never introduce an instrument into a

patient's bladder without having observed the most rigid precautions to avoid the introduction of germs from the external atmosphere."

The various conditions which are embraced under the term "surgical kidney" are unquestionably the result of infection from the more external portions of the genito-urinary tract. Ascending nephritis has been shown by Klebs, Virchow, and others to be due to parasitic infection. The microbes, after entering the bladder, ascend along the ureters, infect the pelves of the kidneys, and even penetrate into the secreting structure itself. According to Lancereaux, renal abscesses under such circumstances contain the same microbes that are found in pathological urine. Microbes have been found by many observers in pyelo-nephritis, these organisms being in some instances bacteria, and in others micrococci. The streptococcus pyogenes has been found in conjunction with various forms of microbes, both bacteria and micrococci, the staphylococcus being especially frequent.

In 1886, Bumm reported eight cases of puerperal cystitis in which he found a micrococcus common to all, which microbe, according to Hallé, was probably the staphylococcus aureus. Clado in 1887 isolated from pathological urine a bacillus which he described as a septic form of bacteria of the bladder. He experimented upon animals with this bacillus and produced cystitis by its introduction into the bladder. Injection of the same micro-organism into the peritoneum resulted in the death of the animal. In three cases of urinary fever this author found in two living patients the same bacillus in blood drawn from the liver, and in one autopsy he found the same organism in the blood. Other authors have isolated from pathological urine micro-organisms which, injected into animals, produced nephritis. Hallé, who has written what is possibly the most comprehensive article upon urinary infection, has given some very interesting observations. In 1887 this author published a very interesting case upon which he formulated his theory of urinary infection.[1] The patient was affected by impermeable stricture with an intense cystitis, and presented, following each attempt at forcible catheterism, violent febrile complications, which finally resulted in death. The purulent urine collected and cultivated during life furnished in a condition of purity the culture of a non-liquefying bacterium. At the autopsy this same bacterium was found in a condition of purity in the urine of the renal pelvis, the parenchyma of the kidney, and in miliary abscesses in the renal structure. They were also found in the general blood circulation and in the liver. This bacterium injected into the peritoneum of a monkey caused speedy death by general infection. The bacterium in this case was subsequently recognized as identical with the bacterium isolated from the urine by Clado. In 1888, Albarran and Hallé published an elaborate bacteriological study of a case of urinary infection observed in the Hospital Necker, and numerous experiments upon animals.[2] These authors

[1] Hallé, Bulletin de la Société anatomique, October, 1887.

[2] Albarran and Hallé, Note sur une bacterie pyogène et sur son rôle dans l'infection urinaire, Academy of Medicine, August 21, 1888.

observed this bacterium in forty-seven out of fifty examinations of pathological urine. In thirty-five urines, studied by culture, fifteen contained this bacterium in a condition of purity; in twenty other cases it was associated with other micro-organisms. In nineteen autopsies made immediately after death the pelvis of the kidney contained this bacterium in eighteen cases. It was found also unassociated with other bacteria in the pus of a case of pyonephrosis removed by incision. It was found in three cases of peri-urethral urinary abscess, and in fourteen cases of infectious nephritis. In two cases of acute febrile infection an early autopsy showed this organism in the blood, the liver, and the spleen in a condition of purity. In six cases of fatal urinary fever of slow development, culture of the blood in the large vessels made in four cases immediately after death yielded this bacterium in a condition of purity. With this organism the authors produced cystitis in the animal by injection into the bladder after ligature of the penis, a fatal general infection by inoculation in the serous cavities, localized suppuration by inoculation of the cellular tissue, suppurative pyelonephritis with renal abscess by injection into the ureter after ligature. It would be a work of supererogation to present all of the conclusive experiments which were made by these authors. It is interesting to note the marked pyogenic properties of the microbe discovered by Albarran and Hallé.

In 1890, Krögius discovered a peculiar microbe in purulent ammoniacal urine.[1] In ten specimens of urine this author isolated in three instances a micro-organism quite different from that described by Albarran and Hallé, both in the method of its formation, its size, and its colorizing properties. The inoculation of this bacillus in the cellular tissue, veins, and peritoneum of the rabbit killed the animal very speedily in some instances; in others at a later period. At the point of inoculation the bacillus produced œdema and gangrene of the cellular tissue, but no suppuration. Sterilized cultures were not so active. This bacillus Krögius termed the *uro-bacillus liquefaciens septicus*. The researches of this author have been supported and confirmed by others since his original discovery.

As illustrative of the many types of germs that have been found in pathological urine taken from twenty-nine cases of cystitis, Rovsing's studies were very interesting. These comprised twelve species of microbes, with some of the varieties of which we are already familiar, such as the bacillus tuberculosis, staphylococcus albus, citreus, and aureus, and new varieties to which he applied the names of streptococcus ureæ pyogenes, cocco-bacillus ureæ pyogenes, diplococcus ureæ pyogenes, micrococcus ureæ pyogenes flavus, and four other varieties which, as Hallé remarks, are nothing but the four preceding varieties deprived of their pathogenic properties. Experiments upon animals showed the pathogenic properties of these various microbes.[2]

---

[1] Krögius, Société de Biologie, July 23, 1890.

[2] T. Rovsing, Berlin, 1890.

The point of greatest interest is the fact that recent investigations have shown the pyogenic microbes found in the genito-urinary tract to be practically identical with the bacterium coli commune. Krögius found in seventeen specimens of pathological urine taken from the bladder an organism which he recognized as identical with pyogenic bacteria and with the bacterium coli commune in twelve cases. In eleven cases this bacillus was present in pure culture. He afterwards found this organism in secondary suppurative processes of the kidney and also in the parenchyma of the spleen. Its pyogenic properties were proven by experimentation upon animals.

A point of interest regarding the relation of bacterial infection to genito-urinary disease is the occurrence of descending infection of the kidney, ureter, and bladder. It has been shown that germs may infect primarily the glandular structure of the kidney, and that subsequently either these germs or their products may infect the pelvis of the kidney, and descending, produce infection of the more external portions of the genito-urinary tract; that is to say, a cystitis may result from a primary septic nephritis acquired by infection through the medium of the general circulation. It has been shown that certain circulatory disturbances afford an invitation for germ-infection. Thus, Heubner ligated temporarily the vesical arteries; he then released the vessels and observed that the influx of blood was followed by coagulation necrosis and thickening of the bladder-walls. He then found that if coincidentally with the removal of the constriction of the circulation he injected pathogenic organisms into the blood, septic cystitis and gangrene of the vesical mucosa resulted. Guyon performed similar experiments upon the kidneys with like result, both as regards the effect of the circulatory disturbance and the *locus minoris resistentiæ* thus afforded to pathogenic organisms subsequently entering the kidney by means of the general circulation.

It is unnecessary to go into further details confirmatory of the important relation of microbial infection to the local and general toxæmias dependent upon pathological conditions of the genito-urinary apparatus. I should like very much to consider in detail in this paper the various phases of germ-infection as presented in gonorrhœa and its congeners, but I fear that my paper has already taxed the patience of the fellows of this association, and I will endeavor to say as few words as possible in this connection.

That the gonococcus is an important factor in genito-urinary infection has, I think, been proved beyond the possibility of dispute. That it is so important a factor as Neisser, Bumm, and others assert is possibly open to question,—open to question at least in this respect, that if it be claimed that without the gonococcus there is no infection of the male urethral mucous membrane, or of the mucous membranes of the female genitalia, too much is claimed for that micro-organism and too little respect is shown for other micro-organisms which thrive in the female genital tract and which may under certain circumstances assume pathogenic properties. It is my firm

belief that, through evolutionary changes, what may be termed the normal micro-organisms of the female generative apparatus may undergo transformations, and assume new and pathogenic properties capable of exciting not only urethral inflammation in the male, but under favorable circumstances—such as is afforded by the traumatism incidental to parturition—may infect the female herself. There is one point which has, I presume, puzzled others as well as myself. Feeling confident that gonorrhœa and its congeners has its origin in filthy and unhealthful states of the female genitalia, I am at a loss to account for the origin of the gonococcus. Is there any organism in the female genital apparatus which may undergo transformation and assume the properties which we know to be peculiar to the gonococcus? Or is the starting-point really in the genital apparatus of the male, the female genitalia acting merely as the culture-bed for the production of this special germ? There is something very striking in the close similarity of the gonococcus and the normal urethral coccus. The question has sometimes arisen in my mind whether the gonococcus is not really a derivative of the urethral coccus; in other words, whether the differences which exist between the urethral coccus and the gonococcus—such differences as variations in their properties of coloration, affinity for pus-cells, and peculiarity of grouping—might not be accounted for by evolutionary changes in the urethral coccus itself. The special properties of the gonococcus would, it seems to me, be no argument against this possibility, for with evolutionary changes of form and an adaptation to its new environment,—*i.e.*, a suppurative inflammation of the urethra,—it is not illogical to assume that the acquirement of new and apparently specific properties might result.

Regarding the evolutionary theory of the origin of the local venereal diseases, there is one fact which seems to me to be of paramount importance,—viz., if we accept the theory of evolution as applying to the higher types of animal and vegetable life, we must necessarily accept it as applying to germ-life, the difference being, it seems to me, that while in the case of the animal and vegetable types, as we see them at the present day, differentiation has arrived approximately to developmental perfection, differentiation and adaptation to environment are going on in a most marked degree in the case of the lower forms of life,—to such a degree that a marked variation in toxic properties, if not in physical form, is naturally to be expected. One thing is certain, if we accept the laws of evolution as applying to the host,—*i.e.*, the animal infected,—we must *nolens volens* accept it as applying to the parasite,—*i.e.*, the microbe. We certainly produce evolutionary changes in the germ—at least so far as its vital properties are concerned—in an artificial environment of our own creation in the laboratory, and it seems to me that if it were not for the natural law of evolution governing micro-organisms, which law prevails much more powerfully in its natural habitat than in our culture-tubes, we would have absolutely no experimental control over such organisms. The only alternative of this theory is the

view of a special creation of perfectly-developed and unvaryingly-typical forms. This, I believe, is incompatible with the present status of biology. A point of considerable importance bearing upon the multiplicity of forms discovered in various infectious genito-urinary processes by different observers, and bearing more particularly upon the close similarity of several forms of microbe thus discovered, is the fact that the physical contour of a germ is not an accurate criterion of its special qualities of infectiousness. Germs of alleged pathogenic properties of a precisely similar character have been found in several very dissimilar pathological processes, suggesting that a metamorphosis of the germ may occur, by virtue of which it acquires a variation of properties of infectiousness without necessarily undergoing any change in physical conformation. Even in cases of urethritis which are distinctly gonococcal in origin—or rather, if you please, in which gonococci are present in great numbers—we stand face to face with a mixed infection. The peri-urethral phlegmons and abscesses, the lymphangitis, the prostatic suppurations, the acute cystitis, and acute inflammation of the kidney, and in women the peritonitis, which occur in the course of gonorrhœa, are due, not to infection with the gonococcus *per se*, but to other germs or germ-products which are associated with it. Gonococci, even in typical gonorrhœa, never exist independently of the common pyogenic microbes. In the joint, muscle, tendon, and other serious complications of gonorrhœa, other germs than gonococci, or the products of other germs, are responsible for the condition. I do not know of a more typically mixed infection than that of gonorrhœa.

I might say in this connection that pus from peri-urethral abscesses following gonorrhœa has been inoculated upon the urethral mucous membrane with a negative result. Ehrmann, of Vienna, has introduced pus from an unopened peri-urethral abscess into a blind sac of a mucous membrane into a healthy hypospadiac without effect. The introduction of the same pus into the urethra of the same individual caused only a slight follicular inflammation that disappeared in a few days.

If the non-existence of a specific gonorrhœal cystitis be established, it will certainly greatly modify the existing views regarding this much-dreaded complication of gonorrhœa. Even prior to the discovery of the gonococcus it was supposed that the gonorrhœal cystitis was due to specific infection,—*i.e.*, to the specific poison of the gonorrhœal process. Since the discovery of the gonococcus it has been supposed that the gonococcus was an exciting cause of a complicating cystitis. Du Mesnil[1] denies that there is such a thing as specific gonorrhœal cystitis. He claims that when gonococci are found in the urine, they are accidental ingrafts upon the infectious process, having entered the bladder along with the purulent products of the urethral inflammation. They are not, according to him, new products developed from true specific inflammation of the vesical mucosa. It is conceivable

[1] Virchow's Archiv, vol. cxxvi., 1891.

that in women urethral or vaginal pus may get into the bladder in this manner; but, as a matter of fact, in my opinion gonorrhœal cystitis is relatively quite rare in women. Du Mesnil claims to have determined by recent researches that gonococci produce no alteration in the composition of urine, cystitis with ammoniacal urine never being produced by these germs. He claims, moreover, that the urine either renders the gonococci harmless or kills them completely.

The members of this association will understand very readily that it is impossible for me to discuss this particular phase of genito-urinary infection exhaustively in this paper; it alone would be sufficient for an entire paper of considerable length. I even hesitated to touch upon it, fearing that I might involve myself in a misunderstanding of my views through inadequate presentation, much as I desire to hear expressions of opinion and a free discussion of the subject from the eminent surgeons who have honored me by their attention.

THE RATIONAL TREATMENT OF COMMON AURAL CATARRH.

BY SETH SCOTT BISHOP, M.D.,

Surgeon to the Illinois Charitable Eye and Ear Infirmary, etc., Chicago.

By common aural catarrh is meant the dry catarrhal form that is the most common in practice and the least amenable to treatment.

Several years ago I began experimenting with emollient injections into the middle ear, using purified liquid vaseline alone and in various combinations. Since the mucous membrane lining the tympanic cavity and Eustachian tube is an extension of the membrane lining the nose and throat, it appears reasonable to assume that diseases of the aural extension of that membrane should be managed on the same principles that govern the treatment of the naso-pharyngeal portion of it. Certain modifications are necessary to meet the requirements of ankylosis of the ossicles, but the emollient applications prove to be helpful directly in the line of our manipulations to overcome immobility.

The practice of injecting liquid remedies into the middle ears is not in the nature of a novelty; but the object of these injections, such as iodine vapor, alkaline solutions, etc., has been chiefly to produce hyperæmia, or stimulation, and to wash out retained secretions.

Referring now especially to the class of cases that are characterized by induration of the tympanic mucous membrane, a sclerotic condition of the tissues about the foot-plate of the stirrup and the articular surfaces of the chain of bones, and a consequent impairment of their mobility, it seems

that any rational course of treatment must include emollient injections. It is a common experience to be told by patients who have recovered from a chronic suppurative inflammation of the middle ear that their hearing has gradually diminished since the drying up of the discharge. On account of this progressive impairment of hearing it has proved beneficial to supplement the discharge with some liquid derivative of petroleum ointment, such as liquid lavoline, in order to keep the conducting apparatus sufficiently softened, supple, and lubricated to regain and retain their ordinary mobility. Another illustration of this fact has repeatedly occurred after operations on the drum-head, such as multiple incisions and resection of the membrane in whole or in part. Such operations have been occasionally followed by a discharge of mucus, sometimes becoming muco-purulent. While the discharge continued the hearing has improved, diminishing again after the drum became dry. The application of emollients has been followed by an improvement in the hearing. This has happened so many times that the analogy of conditions presented and the encouraging results of the experiments have led me to treat sclerosis of the middle ear by copious injections of such emollient fluids.

Who would consider the mere blowing of air into the nose and throat to constitute an efficient treatment of naso-pharyngeal catarrh? To be sure, some of the conditions of ear treatment are different. The case is not exactly parallel. We must bulge the drum-head outward and produce motion in the ossicles during the excursion; but the same purpose is accomplished by the pneumatic otoscope, with the additional advantage of producing the reverse movement, or to-and-fro motion. Moreover, the injection of air into the middle ear for the purpose of massage presses inward on the foot-plate of the stirrup as well as outward on the drum-head, a fact that otologists do not seem to have taken sufficiently into consideration in this connection. On the other hand, the pneumatic otoscope has the advantage of not forcing the stirrup inward while producing the outward excursion of the drum-head. Its motion is, first, all in one direction,—outward; and, secondly, in pressing the piston of the air-pump inward, all in the opposite direction, or inward. All the advantages of the air-douche to the middle ear are recognized and admitted, but I urge that in addition to the air-inflation there should be medication.

The pneumatic treatment for mobilization of the ossicles, supplemented by the use of the ossicle vibrator, will accomplish as much as mere air-douches, and more; but nothing will soften the hardened tissues sufficiently to permit of freedom of movement as well as repeated introductions of emollient mixtures into the tympanic cavity will. Some aurists to whom I have mentioned this method have been fearful that ill consequences might follow. I have never observed any during the employment of these injections daily for some years. Indeed, I have never had occasion to regret having adopted this method, and the results have been such that it is now the exception for me to treat the disease under consideration without spraying

or injecting lavoline into the middle ear, or emollient combinations with liquid lavoline or benzoinol, such as camphor-menthol, oil of pine, etc.

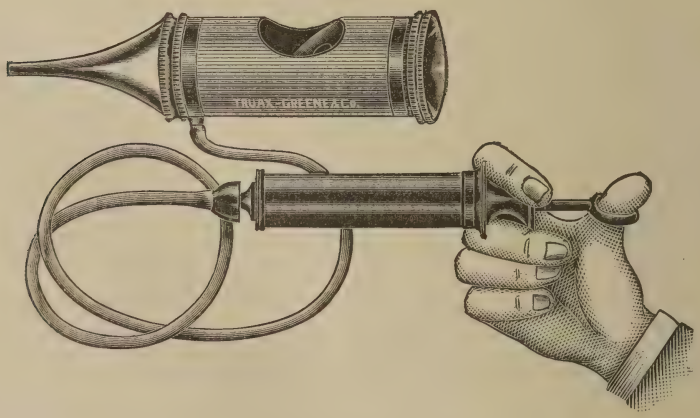
According to recent information two eminent European otologists are now using fluid vaseline injections into the tympanic cavity. I have under treatment at the present time a patient kindly sent to me by Professor Politzer, of Vienna, with a letter in which he mentioned having employed this treatment. The statements of the patient and the history of the case leave no room for doubt that he obtained brilliant results. The professor uses the lubricant in small doses, for he says, "I made injections of ten to fifteen drops of sterilized vaselinum liquid and observed a good deal of improvement. I advised him to continue this treatment twice in a week for about six weeks with you. I hope that the hearing of Mr. K. will be improved and that we can prevent by this an affection of the left ear. The hearing power was so diminished that he could scarcely hear words immediately spoken in his ear." The patient now hears ordinary conversation with the affected ear at the distance of four feet.

Professor Charles Delstanche, of Brussels, also is now using the vaseline treatment.

Several methods are available for this treatment, as follows:

First Method.—When the Eustachian tube is fairly patulous, the column of air under pressure of about eight to fifteen pounds is passed through the hollow inflator containing from forty to sixty drops of the liquid medicament on sponges, while the inflator is inserted into the nostril with the opposite one closed and the cheeks distended with air. This is the simplest method, the easiest to accomplish, and the least disagreeable to patients.

Fig. 1.



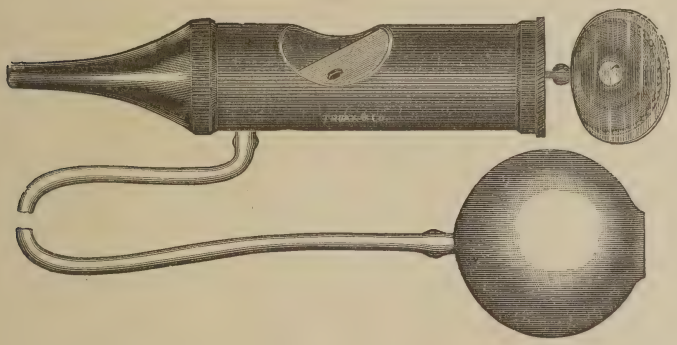
The presence of the liquid in the ear is readily detected, especially if it is of a pungent nature. For example, in case the spray of camphor-menthol is used, the first sensation is usually described as one of coolness, followed by a glow of warmth. A feeling of fulness and pressure, accompanied with bubbling sounds, may be experienced. After a few applications of this

kind there is usually no difficulty on the part of patients in correctly informing the operator when the spray of even the blandest emollient has entered the tympanic cavity. It is advantageous when giving this treatment to a patient for the first time to combine with the liquid lavoline some remedy that will produce such a decided impression on the lining of the ear as to leave no room for doubt as to its having entered the drum cavity.

It is doubted by some aurists whether such sprays can be compelled to enter the ear when the drum-head is intact. Such a doubter expressed his scepticism while paying me a visit, and I had the pleasure of dispelling his doubts by throwing a three-per-cent. solution of camphor-menthol in liquid lavoline into his ears by this method. There were no perforations in his drum-heads.

Second Method.—When the Eustachian tubes are greatly constricted the catheter is inserted. The catheter-tipped inflator, containing sponges saturated with the medicament, is held by the patient near the catheter while the cut-off of the compressed air-tube is used in the catheter just enough to

FIG. 2.



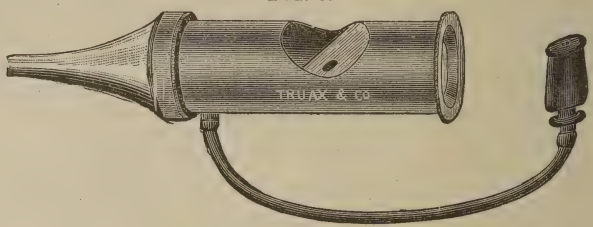
determine when the air enters the ear. Then the cut-off is inserted into the inflator and the latter is coupled with the catheter. The cut-off is slowly opened at first, and then the current of air is rapidly interrupted until the patient indicates by a prearranged gesture that his ear feels full of medicine. The utmost delicacy of touch should be cultivated here.

Third Method.—The patient is given a medicine-dropper filled with warm benzoinol, for example. He holds this up in close proximity to the inserted catheter. The hard-rubber catheter-tip attached to the cut-off is then used to ascertain if the air enters the ear. If so, the medicine-dropper is taken from the fingers of the patient, inserted into the catheter while ten or fifteen drops are discharged, and handed back to the patient. The rubber tip is then coupled with the catheter, when the compressed air is allowed to carry the fluid into the middle ear. The medicine-dropper may be used in this manner several times before the catheter is removed, and until the ear is filled. Some of the medicine escapes, and due allowance must be made for this.

During these treatments all reaching for instruments is avoided by not laying down the cut-off, and the discomfort to patients is reduced to the minimum.

As long as the drum-head remains bulged outward, and until the surplus of the medicine disappears through the Eustachian tube and by absorption, the hearing may be temporarily diminished, and there may be an uncomfortable sensation of fulness or "stuffiness" for several hours. It is advisable to anticipate this transitory effect by an explanation to each subject of this treatment.

Fig. 3.



The inflators adapted to the compressed air apparatus are shown in an illustration published in this journal for September, 1892, page 810, in an article on "Compressed Air and Sprays in Diseases of the Nose, Throat, and Ear," by the writer.

The first method is preferable for all cases in which it succeeds, and in ordinary cases it is effective. The second method is just as thorough as the old one, number three, and is more convenient. It does away with the repeated applications of the medicine-dropper and the repeated coupling of the cut-off and catheter. One coupling suffices. The patient appreciates this fact more than the physician, who usually looks upon the operation with much greater complacency than the most intelligent patient can exhibit.

While the treatment thus far outlined may be sufficient for the early stage of this disease, there are numerous instances in which very important additional measures must be employed. It is not the purpose of this paper to consider the auxiliary treatment which the nose and throat often require.

The tympanic cavity and ossicles having been bathed in the oleaginous applications, the next thing to be done is to mobilize the conducting apparatus. After oiling a machine the lubricant should be distributed by putting the machine in motion.

The pneumatic otoscope is sufficient to accomplish this mobilization in most instances. The one represented in the engraving is similar to the one I exhibited several years ago at the Cincinnati meeting of the American Medical Association. The difference is that this one is operated to much better advantage by a little air-pump instead of with the mouth or rubber bulb. It can be used as gently as the others; it is capable of exerting much greater power; and it is almost as easily operated. The air-pump has a finger-groove and a flange on its barrel and a thumb-ring on its piston-rod,

so that only the thumb and first two fingers of one hand are required to work it.

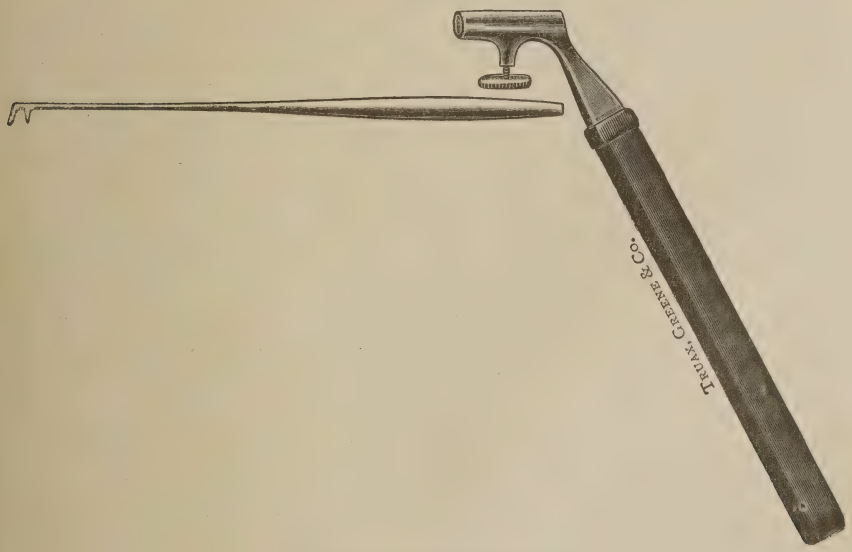
Unless the tissues are very much thickened, stiffened, and hardened this method practised after the softening injections have been employed will liberate the ossicles.

There are advanced cases of ankylosis in which enough motion cannot be obtained by the pneumatic process. The latter may be supplemented by an instrument that will act directly on the mallet. I have formerly used for this purpose a sharp-pointed curved hook, passing it through the drum-head and behind the handle of the mallet and producing enough traction on the mallet to break up the adhesions. The hearing has improved sometimes immediately after this simple procedure, even in elderly persons. But there are objections to the hook that I have endeavored to overcome. It has a tendency to slip off from the mallet when drawn upon, and it is so slender that one cannot help fearing that it may break off and get left in the middle ear. It has not occurred, but it might happen.

I have had Truax, Greene & Co. make a stronger instrument with which we can move the handle of the mallet both outward and inward.

The ossicle vibrator consists of a steel shaft armed at the farther extremity with two levers set in the same plane and at right angles to the

FIG. 4.



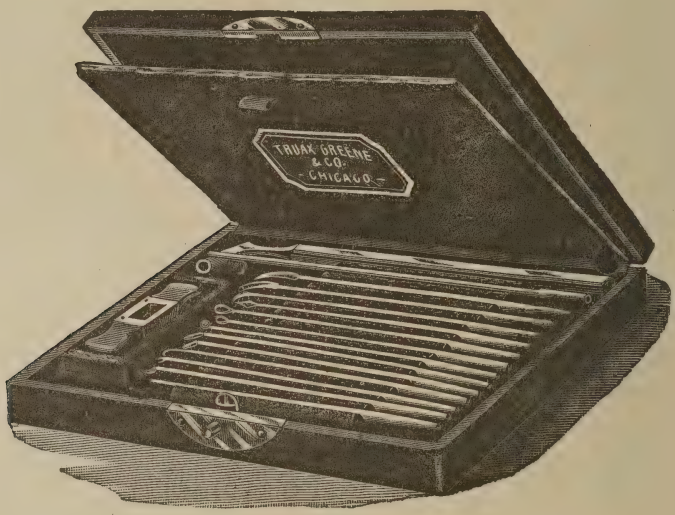
Vibrator with adjustable handle.

shank. The end lever is a little longer than the near one and is curved outward near its point. This curve is to guide it behind the handle. When the vibrator is in position well up towards the neck of the mallet the latter rests between the short lever and the parallel portion of the long one. This arrangement obviates the tendency of the instrument to slip out of place

when adjusted, and the higher the instrument is carried the less is the danger of fracture of the bone.

The shaft of the vibrator is made of the proper size and shape to fit into the angular adjustable handle found in my case of middle-ear instruments.

Fig. 5.



The first one made was sharpened into a cutting surface at the curved extremity of the long lever for the purpose of incising the drum-head as it was introduced, but the requirements of a cutting edge resulted in making the lever too brittle, so that it presented one of the objections against the hook. The vibrator is now made without any cutting surface and is used as follows: The drum-head is first macerated with a twenty-per-cent. solution of cocaine. An incision is made with the paracentesis needle along the anterior border of the mallet-handle, well up. Cocaine is again instilled so that it may anæsthetize the interior of the drum. The vibrator is then carried diagonally through the incision until the extreme lever passes beyond the handle. When the thick portion of the latter rests between the two levers, the latter are brought at right angles to the axis of the mallet-handle and the traction outward is made. This should be gentle but sufficiently firm to overcome the adhesions that exist in the articulations or any bands that may impede the ossicular vibrations. The hand should be guarded against making too sudden or extensive traction at the instant that the adhesions give way.

It is remarkable how much force is required in certain cases to overcome the ankylosis, and the immediate effects may be in the nature of a surprise. To illustrate: While making traction in one case of very strong adhesions, just as I felt the adhesions giving way and was obtaining perfectly free movements of the ossicles to and fro, the patient became pale, slight convulsive movements seized all his extremities, and I saw that he was about to

lose consciousness. The vibrator was withdrawn at once and the patient placed in a recumbent posture. In a few moments he regained his senses and experienced no further unpleasant symptoms, except a sensation of being "light-headed" for a few days. No pain was felt during the whole operation except a trivial one when the incision was made. The patient stated that he never experienced such a delightful state of mind as while he was returning to consciousness; but I mention this incidentally and not as an argument for the operation.

After having overcome the adhesions the pneumatic otoscope is utilized several times a week to maintain the mobility already acquired. But for a few days after the use of the ossicle vibrator the ear is treated to emollients only, to allow the perforation to heal and any soreness to subside.

I have observed that dizziness could be produced by the pneumatic otoscope after the use of the vibrator when it had been impossible to get any such impression before breaking up the ankylosis. It is probable that a previously impacted and immovable stirrup had been released from such impaction. The convulsive movements of the extremities, the loss of equilibrium, and the swoon indicate that the operation effected a movement in the foot-plate of the stirrup and a resulting intra-labyrinthine pressure.

The study of dry aural catarrh in the light of comparison and analogy resolves the indications for treatment into two kinds: first, to soften the tissues and encourage reparative processes by sprays and injections of emollient medicines into the middle ear, and, second, to restore mobility of the ossicles from drum-head to foot-plate.

A UNIQUE CASE OF ANNUAL SHEDDING OF THE EPIDERMIS.

BY JAMES M. SLIGH, M.D.,

Granite, Montana.

JOHN H. PRICE was born December 29, 1856, in Ossawatomie County, Kansas, and for the past fifteen years has resided in Montana, where he has been employed as a workman in various quartz-mills during the greater part of the time. He is five feet nine inches in height, blue eyes, brown hair, streaked with gray, light complexion, well nourished, and of exceptionally good muscular development. He says he has never experienced any illness except a periodical one, to be described. He avers that each year since infancy, on the 24th day of July, he has been taken ill, and within a few days thereafter has shed his skin from the entire surface of his body, including the finger- and toe-nails.

I had heard of him about two years before, and had very naturally doubted the truth of reports regarding this extraordinary occurrence until, one year ago, I saw in a cabinet of curiosities the skin from one of his hands and a part of the arm, when I was forced to modify my doubts.

On July 21 last I received a note from Mr. Price, who resides in a small mining camp near here, stating in effect that he would be taken ill about 5 o'clock P.M. on July 24, and would be pleased to have me observe his symptoms if I cared to do so. The preciseness as to the time with which he predicted his illness amused and astonished me, and I determined to investigate.

Accordingly, at 4.40 o'clock P.M., July 24, 1891, accompanied by my assistant, W. I. Power, M.D., I arrived at his residence, where we were received by Mr. Price and his wife. Mr. Price stated that he had worked in the quartz-mill, sorting ore, until noon that day, when he lay off in anticipation of his illness, although feeling perfectly well at that time. In answer to our inquiries, he stated that ever since he could remember this annual illness occurred on July 24, never earlier than 3 o'clock P.M., and never later than 9 o'clock P.M.; that it usually lasted for four or five hours, after which he would feel as well as usual, and the skin would come off in from two to four days later; that these periods had never missed, except in the year 1886, when he was suffering from an invasion of gonococci, and that from then until his shedding in 1887 he was not well, suffering from "biliousness, bone-ache, dizziness, continually catching cold," etc.; that until within two years past he had felt a delicacy about allowing the public to know of his illnesses, and when they came on he would seclude himself until after the shedding.

At the time of our visit he was nervous, not able to remain in one position for any length of time, but pacing up and down the room. His pulse was 76, respiration 18, temperature $99\frac{1}{10}°$, tongue bright red, with a brownish fur streaked along each side of the median line, and the skin over the body was natural in appearance.

At 5.6 P.M. he experienced a sensation of dizziness and slight nausea, when he lay down, these sensations passing away a few minutes later, and he arose again at 5.15 P.M.

At 6.45 P.M. he was shaking as with an attack of ague, although he felt no sensation of either heat or cold; the face and upper portions of the chest were intensely red, breathing labored and 45, pulse 87, and temperature $99\frac{1}{5}°$. The skin had a cool feel, and was absolutely devoid of moisture. He was very nervous, kept walking the floor, and said he had a tingling sensation over those portions of the body which were reddened, as though the parts were "asleep," and hands and fingers cramped.

At 7.7 P.M. he vomited about one pint of watery fluid, after which he felt easier, the shaking disappeared, and he was able to lie down. From this time until 9.45 P.M. attempts at vomiting were frequent, the redness spreading over the whole body, accompanied by a tingling, prickly sensa-

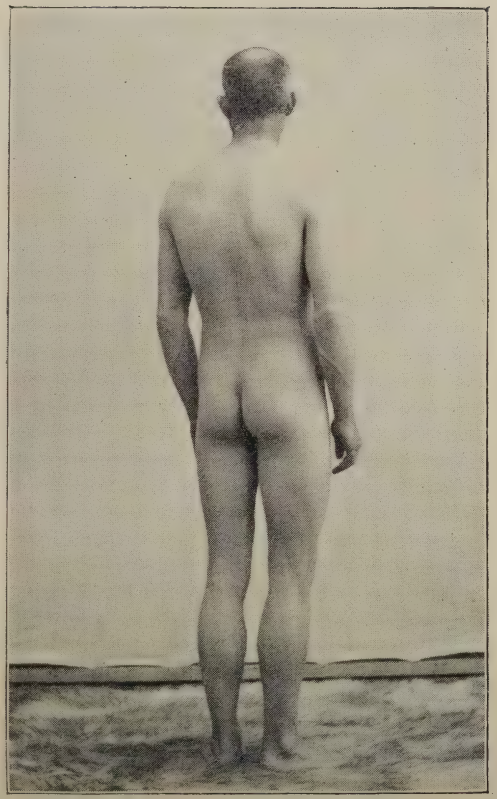


FIG. 1.—Normal appearance of a unique case of annual shedding of the epidermis.

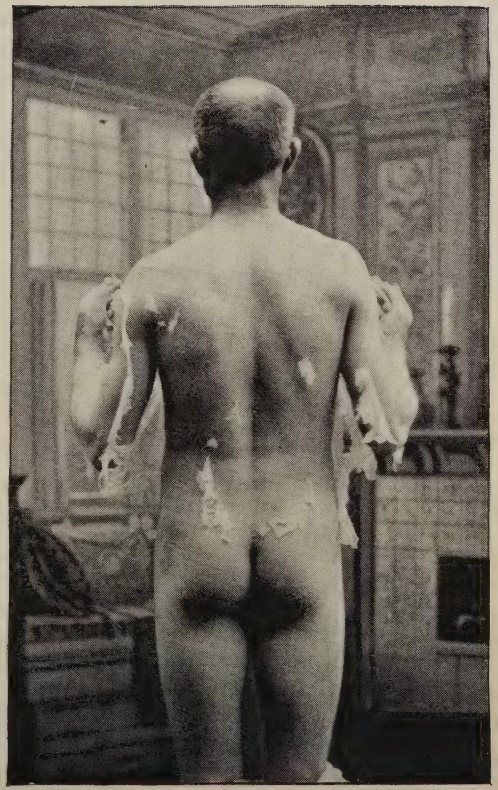


FIG. 2.—Posterior view of the patient after the shedding of the epidermis had commenced.

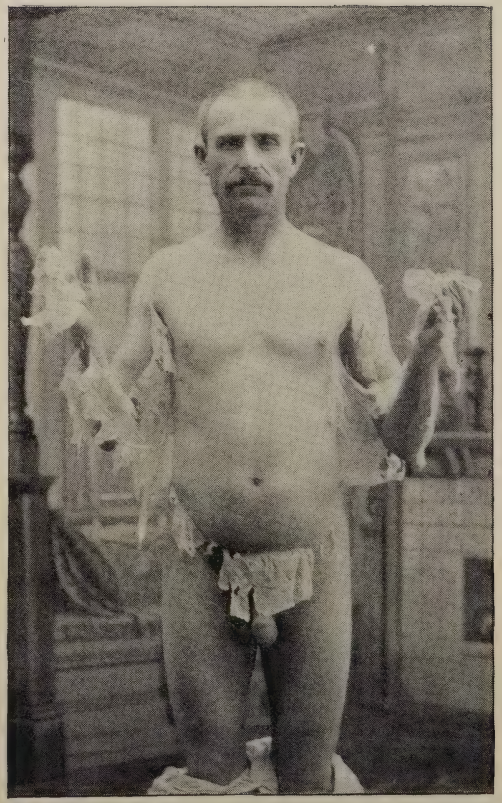


FIG. 3.—Anterior view of the same case.

tion and cold feet, at which latter time the pulse was 90, the temperature 101°, and the skin very dry. A few minutes later he dropped asleep, the face being quite pale, but other portions of the body red. About 10 P.M. we were obliged to leave him, after making arrangements that he should come to my office next day and remain in Granite under our observation until shedding of the skin was completed. He failed to put in an appearance on the 25th, but came to my office about 4 P.M. on the 26th, when I had him put up at the hotel, where he remained under our observation until the evening of July 31. He said he could not come to Granite on the 25th, because he was too ill, from the time we left him on the night of the 24th until the afternoon of the 26th, suffering from "bone-ache, weakness, nervousness, and inability to eat;" that such prolonged illness was very unusual, and when it had occurred on two or three occasions the shedding did not take place as early as when the premonitory symptoms were short and severe, and the skin was not as tenacious,—that is, it did not peel off in an unbroken piece.

At 10 A.M., July 27, I had two photographs taken, one front and one back view, numbered one and two respectively, showing the skin normal in appearance, except for absence of moisture. On July 28 the epidermis commenced to loosen around the prepuce and penis, and over the surface of the body appeared numerous small blebs about twice the size of a pin-head, apparently filled with a clear, transparent fluid, and the soles of the feet appeared bloodless, although he had walked upwards of two miles in a hot sun without a particle of moisture appearing on the body, except on the scalp and upper portion of the forehead.

On the 29th and 30th the condition of the patient was about the same as on the 28th. On the morning of the 31st he thought the skin was about ready to come off, although he said it would not come as good as usual, as it appeared to be getting "rotten." The fluid that had filled the small blebs or vesicles had disappeared, and the epidermis at their sites, and for a small distance around them, was detached from the subjacent tissue, and in many places broken, as though rubbed through by his clothing. About 10 A.M. he started out for a brisk walk, kept at it for nearly two hours, took a cold plunge-bath, and at 1.30 P.M. we commenced skinning him in a photograph gallery. The epidermis appeared to be macerated, and would easily tear or break if great care was not taken in peeling it off. During the process I had a front view taken, as shown in photograph No. 3.

In the manner shown by these photographs the epidermis over the entire body was taken off on July 31, with the exception of the legs and feet, on which it appeared to be quite adherent, and so remained until August 3, when it was taken from these parts. I have the greater part of the epidermis thus removed in my possession, and it apparently will "keep" for an indefinite period. On the scalp and over the pubis, where the hair is thick, the epidermis breaks up in removing, and has to be combed out, but in other portions of the body the small hairs pull through the epider-

mis as it is peeled off. Over nearly the whole of the body the epidermis thus cast off is quite tender, and has to be handled with some care to keep from tearing, but on the palms of the hands and soles of the feet it is very tough, and great force has to be used in order to tear it. Under the epidermis thus removed is a new epidermis, which apparently forms between the time of premonitory symptoms and peeling, which is as soft and tender as that of a new-born babe, although it rapidly toughens, and he is ready for hard manual labor in four or five days after peeling.

I have endeavored to outline the facts in this case as witnessed by Dr. Power and myself, and shall not attempt to theorize as to the cause, for a thorough investigation through questioning fails to give the slightest clue upon which to build a theory. Should the phenomenon have appeared once only, a cause might have been found; but who will formulate a plausible theory for its appearance each year, and at nearly the same hour on the same day of each year? All the doubts I formerly had as to reports of this case are dispelled, and I am satisfied that Mr. Price tells me the truth when he says that next year the skin may be taken off in one piece and mounted by a taxidermist, if reasonable care is observed.

It is probably a case of dermatitis exfoliativa, but without the exhaustion supervening on recurring exfoliations or the changes noticed in the skin in chronic cases of this disease, as noted by writers on diseases of the skin.

REVIEW OF MEDICINE.

MEDICINE.

IN CHARGE OF JOSEPH P. TUNIS, A.B., M.D.,

Assistant Demonstrator of Surgery in the University of Pennsylvania; Surgeon to the Dispensary of the Presbyterian Hospital; Visiting Physician to the Children's Dispensary of St. Clement's Hospital and to the Church Home at Angora, Philadelphia.

Pulmonary Inflammation as a Complication of Remittent Fever. (*New York Medical Record*, March 11, 1893, p. 297.) By Dr. D. E. English.

The writer believes that many of the false forms of disease which cause the attending physicians so much anxiety are caused by malarial poison, as the toxine of malaria can cause any morbid condition that can be produced by acute or chronic, active or passive congestion of the internal organs. When inflammation of the lungs attacks a patient suffering from malaria, if recovery results, the lungs are left in a condition favorable to the establishment of either tuberculosis or chronic bronchitis.

This complication of remittent fever requires special treatment besides that directed towards the primary disease. The main indication is to relieve the lungs of their abnormal supply of blood, which may be accomplished in the following way:

1. Stimulate the heart with digitalis, and so increase the amount of blood in the systemic vessels.

2. Congest the skin by giving alcohol internally and by using rubefacients and dry cups. Mustard to the feet or legs and turpentine to the chest answer the purpose admirably.

3. Lessen the quantity of the circulating fluid by diaphoresis, diuresis, watery purges, wet cups, and venesection. The digitalis and alcohol will in most cases produce enough diuresis and sweating without recourse to more powerful and dangerous drugs. They may be aided by dry heat externally and large draughts of water—which should not be given too cold—internally. In strong patients pilocarpine may be administered. For purgation a large dose of calomel (twenty to thirty grains) should be given, followed by a saline cathartic.

Coughing made easy in Bronchiectasis. (*Journal of the American Medical Association*, March 18, 1893.) By Dr. H. D. Didama.

In the treatment of bronchiectasis this writer has seen some excellent results follow thorough evacuation of the dilated bronchial tubes in a position where gravity could exert its influence for the thorough draining of the dilated portion of the lung.

A woman of thirty-five years of age had had bronchial catarrh for a year and a half and a few slight hemorrhages. After a time the cough became paroxysmal, and during these violent fits, which lasted without sensible mitigation from sixty minutes to three hours, the copious expectoration was so offensive that the windows had to be kept open. Vomiting occurred several times a day, coinciding with the severe spells of coughing, and the patient was very weak and emaciated. In addition to a course of medication, including iron, strychnine, Venice turpentine, santal, etc., and the use of a steam atomizer with a deodorizing spray, the following instructions were given the patient. She was made to understand that a pocket had formed in the bronchial tube of the lungs, and that when this pocket became filled and running over, as it did two or three times a day, the unpleasant and irritating material, by its action on the sensitive bronchial mucous membrane, caused the terrible fits of conghing. The walls of this cavity were so thick that even the most violent efforts at coughing could not compress them sufficiently to thoroughly empty the contents. In this way a portion of the putrid matter remained to contaminate future collections. The patient was therefore instructed to lie on the bed or on the lounge with one hand on the floor and the head almost reaching to the hand, so that the pocket would be inverted and the fluid would run out almost of itself, and its expulsion would be rendered easy by a short spell of coughing. The

patient was advised not to wait until the pocket became wholly filled again, but to anticipate this period by inversion four or five times daily.

These instructions were faithfully carried out, and the result was very satisfactory. In five minutes the pocket could be emptied more completely than when she had formerly "coughed her head off" for an hour or longer. The odor disappeared, vomiting and diarrhœa ceased, her flesh became firmer, and convalescence was established so successfully that she is now able to ride twenty miles to town for inspection every two weeks.

THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,
Professor of Therapeutics, McGill University, Montreal, Canada.
ASSISTED BY
D. I. EVANS, M.D.

Myxœdema, and Recent Advances in its Treatment. (*Lancet*, January 21, 1893.) By Hector Mackenzie, M.D., F.R.C.P.

A few years ago little could be done to alleviate or check the progress of this disease; but recently brilliant results have been obtained from the administration of the thyroid gland, or of some preparation derived from it. After Professor Horsley pointed out the close resemblance to human myxœdema of the dyscrasia produced in some of the lower animals by the removal of the thyroid gland, efforts were made to arrest the progress of the disease by transplanting a thyroid gland previously obtained from an animal. This operation was followed by distinct but, unfortunately, only temporary improvement, owing to the absorption of the gland by the surrounding tissues. Then hypodermic injections of a glycerin extract of the thyroid gland were employed. Objections to this plan arose, not only from the difficulty of obtaining the injecting fluid in an absolutely aseptic condition, but also from the fact that occasionally the injections were followed by alarming symptoms, such as lividity, loss of consciousness, temporary loss of power in the extremities, or general muscular weakness. Very recently Dr. Mackenzie has employed the administration by the mouth of either the fresh thyroid gland or some preparation of it, and has obtained very satisfactory results. At first two fresh sheep's thyroids were given, finely minced, every day, with immediate benefit to the temperature and sensations of the patient. By the end of the first fortnight the general appearance of the patient had considerably altered for the better.

The pulse, however, had more than doubled in frequency, and troublesome vomiting occurred. After longer experience Dr. Mackenzie considers both these symptoms an indication that too much of the gland is being administered. After two months of treatment the soft skin had replaced the

hard by cuticle, there was a distinct loss of weight, and great improvement in the mental condition and in the power of speech. The amount required to obtain the best results, Dr. Mackenzie thinks, should not exceed from half to one gland, or the extract from this amount, twice a week. At a later period the same amount only once a week appears to be sufficient. The finely minced gland may be given in beef tea, or in a little brandy and water. Lately a pharmaceutist has succeeded in preparing a powder which is tasteless, keeps well, and appears to be satisfactory in its effects, leaving little to be desired. This same treatment has been tried in exophthalmic goitre, but has been proved to have no influence in this latter affliction.

The Treatment of Diabetes Mellitus by feeding on Raw Pancreas, and by the Subcutaneous Injection of Liquor Pancreaticus. (*British Medical Journal*, March 4, 1893.) By W. Hale White, M.D., F.R.C.P.

Owing to the success of the treatment of myxœdema by the juice of the thyroid gland, it was suggested by Dr. Mansell Jones that the pancreatic juice might have some value in the treatment of diabetes, and the experiment has been made in several of the English hospitals. Dr. Mackenzie found that during its administration the patients lost their feeling of lassitude and felt better in every way. Thirst was distinctly diminished, the daily amount of fluid drunk falling from an average of twelve pints to six pints. The amount of urine was also diminished, but the relative amount of sugar passed was not affected. Very careful observations were made in the case of two patients under the care of Dr. White. In one case he found the amount of sugar distinctly lessened under the use of the raw pancreas by the mouth. The hypodermic injections of the liquor pancreaticus had much less influence. In summing up the results of his experiments, he says that the patients took the raw pancreas quite easily, but in a few it seemed to induce an erythema on the skin. In all it produced an increase in body weight and a distinct feeling of strength; but the treatment had almost no action on the quantity of the urine, on its specific gravity, and on the amount of urea contained in it.

Terpene Hydrate in Bronchial Catarrh. (*British Medical Journal*, March 4, 1893.) By William Murrell, M.D.

The writer calls attention again to the value of this drug in the treatment of affections of the nasal and bronchial mucous membrane. It is a hydrate of turpentine made by treating oil of turpentine with nitric acid and alcohol. In appearance it resembles chloral hydrate, but its odor resembles that of terebene. It is practically insoluble in water. Dr. Murrell says it will be found to lessen bronchial secretion, to relieve cough, and at the same time act as a diuretic. It may be conveniently administered in an elixir containing five grains to the half-ounce and flavored with syrup of wild cherry, syrup of tar, or with cherry-laurel water.

NEUROLOGY.

IN CHARGE OF CHARLES W. BURR, M.D.,
Pathologist to the State Asylum for the Insane, Norristown; Visiting Physician to the Home for Incurables; Visiting Physician to St. Joseph's Hospital, Philadelphia, Pa.

Neurasthenia and Syphilis. (*Centralblatt für Nervenheilkunde und Psychiatrie*, March, 1893, p. 113.) By Professor Paul v. Kowalewsky.

In a paper on this subject containing illustrative cases the author concludes that four classes of neurasthenia occur in syphilitics: 1, hereditary syphilitic neurasthenia; 2, acquired syphilitic neurasthenia; 3, inanition neurasthenia caused by too energetic antisyphilitic treatment; and, 4, psycho-traumatic neurasthenia caused by the mental and moral depression produced by the knowledge of the presence of the disease. This grouping is of importance from a therapeutic point of view. Cases belonging to the first class require long treatment with alteratives and tonics. Those of the second class need, of course, specific treatment. In cases of inanition neurasthenia specific treatment must be stopped at once. In the last class tonic and specific treatment must be combined with psycho-therapy.

Contribution to the Study of Progressive Muscular Atrophy. (Reprint from "Modern Medicine and Bacteriological World," 1893.) By W. H. Riley, M.D.

The author combats the view held by Charcot that amyotrophic lateral sclerosis is a disease separate and distinct from progressive muscular atrophy, holding, on the other hand, the opinion that there is almost always degeneration of the pyramidal tracts, and that the presence or absence of spastic symptoms depends upon the relative amount of change in the two parts of the cord involved. If the changes in the pyramidal tracts are excessive, while those in the corresponding motor cell and nerve-root are slight at any particular time in the history of the case, there may be symptoms pointing to a disease of the former, and *vice versa*. Again, we have no evidence that the changes in the pyramidal tracts are primary to, and the cause of degeneration of the motor cell and fibre.

Itching of Central Origin, or Brain Itch. ("Review of Insanity and Nervous Disease," December, 1892.) By L. Bremer, M.D.

The above is a thoughtful paper upon this question. The author regards it as proven that there may be central pain and itch. Many neurasthenics are relieved of troublesome local itching by the combined use of bromide, ten grains, three times daily, with one-quarter grain of extract of cannabis indica. The other remedies and procedures commonly employed in the treatment of this condition must not, however, be neglected. One of the best means of treatment of pruritus of any kind is the warm bath with soda and starch (a handful of washing-soda and half a pound of starch to an ordinary bath-tub full of warm water).

Hysterical Seizures relieved by Hypnotic Suggestion. (*University Medical Magazine*, April, 1893.) By Judson Daland, M.D.

For some months the patient, a woman, had been having attacks of unconsciousness with convulsive movements. Complete anæsthesia, so that the introduction of pins beneath the nails produced no evidence of pain, borborygmi, normal facial expression, strong efforts to vomit, and pupils of normal size. She was easily hypnotized, became somnambulistic, and was open to treatment by suggestion, which was successfully used.

Neuritis and Myelitis and the Forms of Paralysis and Pseudo-Paralysis following Labor. (*University Medical Magazine*, April and May, 1893.) By Charles K. Mills, M.D.

The author discusses these affections under the following heads: 1. Traumatic paralysis of the peroneal type, usually associated with severe neuritis. 2. Sacral and sacro-distal neuritis, sometimes accompanied by a pseudo-paralysis, and often maintained or aggravated by disease and displacements of the pelvic organs and tissues. 3. Puerperal neuritis, local or multiple, and due to septic or other infection. 4. The neuritis, paralysis, and pseudo-paralysis of phlebitis and phlegmasia alba dolens, which are often septic. 5. Puerperal myelitis occurring under the same conditions as the forms of septic and infectious neuritis.

PEDIATRICS.

IN CHARGE OF T. M. ROTCH, M.D.,

Assistant Professor of Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

ASSISTED BY

E. M. BUCKINGHAM, M.D.,

Instructor in Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

Five Cases of Pseudo-Leukæmia. (*Archiv für Kinderh.*, 1892, Bd. xiii. p. 305; *Archives of Pediatrics*, March, 1893, p. 276.) By Baginsky.

These cases are from the report of the Kaiser and Kaiserin Frederick Children's Hospital. Baginsky speaks of the apparently close connection between pseudo-leukæmia and rachitis. We have often, in rachitis, enlargement of the spleen, although it may be wanting; and we find also, as he has shown, certain changes in the blood-corpuscles. Later observations have convinced him of the greater frequency of enlargement of the spleen in rachitis, enlargements varying from a slight degree to the greatest. He quotes Von Jaksch: "That it is impossible to say at present in how far rachitis is to be considered the etiological factor in this disease, or if the disease occurs in other than rachitic children."

The Surgical Treatment of Epilepsy. (*American Journal of the Medical Sciences*, 1892, vol. civ. p. 503; *Archives of Pediatrics*, March, 1893, p. 287.) By Drs. A. G. Gerster and B. Sachs.

Of ten cases reported, five were children,—namely:

Case I.—A boy of six, said to have had "brain fever" at ten months. At five and a half years, right-sided convulsion, repeated at intervals of one week; right hemi-paresis since first attack; athetoid and associated movements. Operation by exposure of motor area of right arm, determined by faradization; dura tense and adherent; puncture, no cyst found. Recovery from operation excellent, and the result was immediate diminution of attacks. One mild attack after leaving hospital. Not heard from since.

Case V.—Boy of eight years. Traumatism at seven months. Six months previous to operation began to develop auditory and olfactory auræ, and then general epileptic attacks. If ear ceased discharging, attacks became worse. Two operations were done. At the first, the mastoid was opened, and two sequestra of bone removed. At the second, the mastoid was again opened, and a silver canula inserted to secure permanent drainage. Attacks ceased after the second operation (November 17, 1891).

Case VIII.—A girl of nine years. Injury to the head at six months, a tedious illness with slow development at ten months. At five years innumerable daily convulsions, and idiocy. Operation; a large opening made with the trephine over the motor area on the left side of the head; slight improvement.

Case IX.—A boy of nine years. A congestive chill and convulsions at five years, but without paralysis. Two or three years later developed Jacksonian epilepsy, beginning in the left hand, without loss of consciousness. Operation consisted of excision of the hand centre in the right hemisphere; considerable tissue was removed; and the hand was paretic for a few days. There was some immediate benefit, but it was not lasting. In later cases the right arm was also involved.

Case X.—A boy of twelve years. After an injury to the head at ten years he was unconscious for ten days, and had convulsions during this time. At eleven years convulsions became regular and frequent. Scar in left occipital region near median line. The operation was done by a trephine and chisel, over the occipital region. Report of results not yet made.

Spasmodic Movements of the Head in Infants. (*Archives of Gynæcology, Obstetrics, and Pediatrics*, January, 1893, p. 45.) By Petersen.

Five cases of rotatory spasms of the head in infants are reported. The author proposes the name of "gyrospasm" for this condition, but does not suggest that its etiology is different from that of other spasmodic movements in infants, such as nodding. In one case only was there associated nystagmus, and in this case the movement was confined to one eye. In another case there was convergent strabismus. Gyrospasm was first noticed in these cases at the ages respectively of three months, four months, five months,

seven months, and eight months. "Taken together, therefore, the cases do not support Henoch's view that dentition is a cause." Petersen suggests that in most of the cases cerebral concussion will be found to be the determining factor, and observes that in adults severe concussion may give rise to rapid though temporary nystagmus. The prognosis is, he believes, good; but a recovery may be hastened by the administration of bromide of potassium in doses of from one and one-half to three grains thrice daily.

Case of Jacksonian Epilepsy; Operation; Relief. (*Annals of Surgery*, 1892, vol. xvi. p. 409; *Archives of Pediatrics*, March, 1893, p. 288.) By Ingersoll Olmstead, Hamilton, Ontario.

A boy of nineteen years had fallen from a tree when twelve years old, receiving a depressed fracture of the skull. Two years later he developed Jacksonian epilepsy, beginning in the left hand. He grew worse, epileptic attacks becoming frequent. Operation, July 28, 1890, by trephining over seat of depression, removing the depressed portions of bone and placing them in good position. The patient made a good recovery, and two years and three months after the operation was in good condition, with only occasionally a slight attack of epilepsy.

SURGERY.

IN CHARGE OF B. FARQUHAR CURTIS, M.D.,
Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

Results of Operations for Carcinoma of the Rectum. (Zur Statistik und operativen Behandlung der Rectumcarcinome. *Beiträge zur klinische Chirurgie*, 1893, x. p. 208.) By Dr. M. Lövinsohn.

Lövinsohn gives a statistical study of the cases of rectal carcinoma operated upon at Czerny's clinic during thirteen years, including a material of one hundred and nine cases subjected to radical operation. Ten cases died from the operation. Of the remainder, twenty-one per cent. lived two years, fifteen per cent. three years, thirteen per cent. four years, and eight per cent. five years, while four others are living more than six, eight, eleven, and thirteen years after the operation. Forty patients—that is, forty per cent. of those recovering—have survived the usual three-year limit, a truly remarkable result. Thirty-six cases were subjected to the sacral operation, the rest to the old or perineal method.

Hydatid of the Brain; Removal by Osteoplastic Method; Recovery. (Kyste hydatique du Cerveau. *Revue de Chirurgie*, 1892, p. 790.) By Dr. Llobet.

Llobet reports a case of hydatid cyst in an Argentine boy thirteen years old, with symptoms lasting for two years,—Jacksonian epilepsy, violent

headache, complete right hemiplegia, and contractures. A bone-flap, eight by ten centimetres in size, with its pedicles three centimetres wide, lying twice the width of the finger above the left auricle, was raised. The dura mater did not pulsate, and being incised, two hundred and sixty grammes of fluid were discharged from a cyst, and then the wall of the latter was removed by a pair of forceps. There were no daughter cysts, and no hooks were found. Drainage and suture. Recovery with disappearance of the symptoms, except the weakness of vision and of memory. The bone-flap, apparently, did not unite by callus to the skull.

Abscess of the Liver; Bacteriological Study. (*Bulletins et mémoires de la Société de chirurgie de Paris*, 1892, xviii. pp. 569, 614, 643.) By MM. Fontan, Tuffier, and Moty.

Considerable interest has been shown during the past year in the study of the bacteriological questions connected with abscess of the liver. In Paris, Fontan reports two cases (one operative, one post-mortem), in both of which the staphylococcus pyogenes was found. He adds that in eight other cases he found the same micro-organism. Tuffier, on the other hand, reports three operative cases of abscess of the liver and one of suppurative cholecystitis, in none of which could micro-organisms be found. Moty has made no bacteriological examinations, but suggests that the contradiction may be due to differences in course, some abscesses being much more chronic than others and therefore sterile. No mention is made of the amœba.

The Sterility of Wounds treated Aseptically and Antiseptically. (Untersuchungen über die Sterilität aseptisch und antiseptisch behandelter Wunden unter aseptischen und antiseptischen Verbänden. *Archiv für klinische Chirurgie*, 1892, xliv., Heft 4, p. 876.) By Dr. O. Lanz and Dr. A. Flach.

Lanz and Flach have been making a series of culture experiments at Kocher's clinic, and reached the following conclusions: 1. No method of operation and wound treatment can exclude all bacteria, but the presence of certain forms does not affect the primary healing of the wound. 2. Streptococcus and staphylococcus pyogenes aureus always cause infection, while staphylococcus pyogenes albus only does so under certain circumstances, and the ordinary micro-organisms of the skin do no harm. 3. Infection takes place by the drainage-tube oftener than is supposed, but usually by harmless bacteria; yet it is well to remove the clot in the tube as well as the tube itself, for it is often infected. 4. Irrigation of the wound with bichloride of mercury solution rather does harm than good, injuring its surface and lessening its power of resistance to infection. 5. Antiseptic dressings are preferable to aseptic, for the dressings when removed almost invariably showed infection unless impregnated with bichloride, or, better still, iodoform. 6. Drainage should be employed for twenty-four hours in every case where the wound cannot be entirely closed by buried sutures, for when the tubes are removed early it does not delay healing.

GENITO-URINARY SURGERY.

IN CHARGE OF WILLIAM K. OTIS, M.D.,
New York.

The Mechanism of Bladder-Closure and of Urination, and the Physiological Offices of the Prostate. (*The Medical Fortnightly*, April 15, 1893.) By Dr. Ernst Finger, Vienna.

This author assigns the following functions to the prostate, which are fully in harmony with the complexity of its structure:

A. The muscular tissue, through its subdivisions, acts as, 1, sphincter of the bladder; 2, sphincter of the seminal vesicles; 3, sphincter of the prostatic glands; 4, expulsor of the urine.

B. The glandular tissues appear to act as a generative organ by virtue of their secretion, and to bring about the vivification of the previously motionless spermatozoa.

C. The caput gallinaginis acts, 1, as a closer of the urethra posteriorly during coitus; 2, it also seems to have an intimate functional connection with the acts of erection and ejaculation, and the feeling of voluptuousness.

In regard to the part played in the mechanism of urination by the prostate and the prostatic urethra he is fully in accord with the views of Esmarch and of Ultzmann, who claim that after a considerable portion of urine has collected in the bladder that organ becomes distended, irritating the sensory nerve-endings in the bladder. These nerves, passing up through the spinal cord, transmit to the brain the message, "Full bladder!" If the bladder becomes still further distended, reflex action excites the detrusor muscle to more powerful contraction. The detrusor gradually overcomes the internal sphincter and a little urine now enters the neck of the bladder, upon which the external sphincter and compressor urethræ contract, partly through reflex action and partly by volition, and hinder the further advance of urine. At this instant is felt the desire to urinate. If the will now causes the external sphincter to relax, the urine passes out in a full stream.

From the foregoing it is apparent,—

1. That the external sphincter surpasses the internal sphincter in resisting power, inasmuch as it is able to dam back a stream to which the internal sphincter has previously succumbed.

2. That with a distended bladder, as soon as the desire to urinate begins to make itself felt, the urine gathers not only in the bladder but also in the pars prostatica, by which means the capacity of the bladder is augmented (? W. K. O.), the viscus assuming meanwhile more and more of a pear shape.

3. That the pars prostatica possesses nerve-endings of special sensation which convey the call to urination when irritated, either physiologically by the pressure of urine entering the pars prostatica, or pathologically, by mechanical or chemical irritation, or by inflammation of the parts.

Bladder Photography. (La Cystographie. *Annales des Maladies des Organes Génito-Urinaires,* February, 1893.) By Dr. Nitze, of Berlin.

Dr. Nitze, the inventor of the cystoscope, has succeeded in producing some really extraordinary photographs of the interior of the living bladder through his instrument, overcoming difficulties which had previously appeared to be insurmountable.

In 1888, Fenwick, of London, succeeded in making photographic plates of the interior of the artificial bladder (which were somewhat imperfect), but all attempts to reproduce them in the living subject were fruitless.

The image which is seen through the cystoscope is a virtual image which cannot be photographed, the real image floating free near the end of the tube and of very small dimensions, never larger than two millimetres in diameter. By means of an exceedingly ingenious camera Professor Nitze is enabled to obtain excellent negatives of this tiny picture, which may be enlarged until they assume the size of the ordinary cystoscopic field, and are equally clear and defined.

Cystoscopic photography is chiefly serviceable in demonstrating to students and surgeons the various lesions of the bladder for purposes of instruction, but it is also serviceable as a means of recognizing the growth of neoplasms by comparing the photographs taken at varying intervals, and as a means of making definite records of important cases.

ORTHOPÆDICS.

IN CHARGE OF REGINALD H. SAYRE, M.D.,
Assistant to the Chair of Orthopædic Surgery, Bellevue Hospital Medical College, New York.

Lateral Deviation of the Digital Phalanges. (De la Déviation Latérale des Phalanges des Doigts. *Annales d'Orthopédie,* March, 1893.) By Dr. Jochimsthal, of Berlin.

The author reports a case of congenital lateral deviation of the ungual phalanges of both thumbs in a child ten years old, who also had congenital club-foot. The mother had the same deformity of the thumbs, though to a slighter degree. The ungual phalanges formed in the boy's case angles of one hundred and twenty degrees and one hundred and thirty degrees respectively with the proximal phalanges, being bent towards the ulnar side of the hand, there being hypertrophy of the radial side of the head of the first phalanx. By the application of force the deformity could be reduced, and the author applied an apparatus to retain the thumbs in normal position, hoping in this way to reduce the hypertrophy of the radial side of the head of the first phalanx and so secure a normal joint, as is occasionally done in genu valgum when the bones are soft. [The editor has seen a similar con-

dition in the feet, and here found it was not possible to keep the toes straight by an apparatus, and was obliged to remove a wedge of bone to restore the relations of the phalanges.]

Achillodynia. (*Weiner Med. Presse*, January 8, 1893.) By Dr. E. Albert.

The author has had several patients who were unable to stand or walk on account of pain at the insertion of the tendo Achillis, which pain disappears when the patient sits or lies down. He gives this condition the name of "achillodynia."

There is swelling at the insertion of the tendon, but very little tenderness on pressure; sometimes the os calcis also is thickened. Hot and cold applications, tincture of iodine, mercurial ointment, and all other measures he has tried have been of no use. It does not seem to be dependent on syphilis, gout, or gonorrhœa.

The author thinks it is not the same thing as that which Raynal, and also Kermisson, described as "peritendonous cellulitis of the tendo Achillis," as nodular thickenings are found in the tendon itself in this affection, but believes it more like the "partial rupture and detachment of the tendo Achillis" described by Pitha, although in "achillodynia" Albert failed to find rupture or detachment of the tendon.

[The description corresponds with certain cases of periostitis of the os calcis following partial rupture of the tendo Achillis at its insertion.—Ed.]

OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF JOHN M. KEATING, M.D., LL.D.,

Colorado Springs, Colorado; Fellow of College of Physicians of Philadelphia; Gynæcologist (Emeritus) to St. Agnes's Hospital, Philadelphia; formerly Visiting Obstetrician to the Philadelphia Hospital (Blockley); Editor "Cyclopædia of the Diseases of Children," etc.

Technique of Abdominal and Pelvic Operations. (*Medical Bulletin*, January, 1893.) By W. E. Ashton, M.D.—Discussing this subject, the writer states that to prepare the intestinal tract for an operation he uses granular effervescent sulphate of magnesia, in teaspoonful doses, until five or six free movements are produced. After this, to secure a movement once in every twenty-four hours, two teaspoonfuls in the morning are given daily. If the patient cannot take salts he uses calomel, beginning with five grains and following with half a grain every hour, until free evacuations occur. The bowels are then kept open daily by enema,—a pint of warm salt water, a tablespoonful of the non-effervescent sulphate of magnesia, and a teaspoonful of spirits of turpentine. Should the bowels not move within thirty minutes after the use of this enema, an ounce of pure glycerin is injected into the rectum. The sulphate of strychnia, one-fifteenth of a

grain, is given hypodermically three times a day during the seven days of preparatory treatment, and the author says, though this seems a large dose of the drug to administer, he has never seen any ill effects following its use, if carefully watched. Immediately before administering the anæsthetic the patient is given a hypodermic injection of morphia, grain one-sixteenth, and sulphate of strychnia, grain one-tenth. The use of these drugs lessens the tendency to post-operative shock and vomiting. After the operation, the author does not give anything by the mouth for twenty-four hours. After that, he suggests koumyss, a clear broth, or one of the beef extracts, or peptonized milk. As a drink he uses small quantities, frequently repeated, of soda-water, or ordinary water which has been boiled. The patient is never allowed to take anything in the stomach as long as there is irritability from the anæsthetics. If there is much thirst, however, four to six ounces of warm water are injected into the rectum, and repeated every three hours. If there is much sick stomach, nothing is used except dry champagne; but if the nausea continues beyond twenty-four hours, the patient is given an enema of four ounces of peptonized milk, or beef juice, every three hours.

Vaginal Ligation of a Portion of the Broad Ligaments for Uterine Tumors or Hemorrhage. (*American Journal of Obstetrics*, etc., April, 1893.) By F. H. Martin, M.D.—The author has tried this operation and recommends it for the following conditions: 1. Acute hemorrhage of the cervix, from all acute or chronic causes, which cannot be readily controlled by milder methods, as (*a*) rupture of the cervix in child-birth, by operation or by any other cause; (*b*) cancer of the cervix. 2. Hemorrhage from the body of the uterus, as a result of abnormal growths; (*a*) fibromyomata; (*b*) sarcoma; (*c*) carcinoma; (*d*) intractable hemorrhagic endometritis. 3. For the purpose of changing the nutrition of myofibromatous tumors, so that they will shrink in size, and, when of small dimensions, disappear altogether.

Sarcoma of the Uterus previous to Puberty. (*American Journal of Obstetrics*, etc., April, 1893.) By T. C. Smith, M.D.—This case had been previously reported in this journal in 1883, but, as it appears to have been overlooked, the author republishes it. The child from whom this uterus was taken was three years old. At the first examination a tumor about the size of a chestnut protruded from the vaginal orifice. Under ether this was removed, and another appeared, which was likewise treated. With the finger a half-pound of mucous polypi were removed. The child died thirty-three days later, and the autopsy showed the uterus to be the seat of malignant disease. Four months after removal the uterus and appendages were found to weigh thirty-one ounces. The specimen is No. 9104, Pathological Section, Surgeon-General's Office, and has been definitely stated to be a sarcoma by Drs. Robert Fletcher and I. A. Blackburn. A drawing is also submitted.

OPHTHALMOLOGY.

IN CHARGE OF J. E. HARPER, A.M., M.D.,
Chicago, Illinois.

Glaucoma.—Mr. Henry Juler (*Clinical Journal*, December 21, 1892) expresses the opinion that a large upward iridectomy is the only effective method of relieving abnormal increase of tension. Eserine and pilocarpine have the effect of reducing increased tension, but they are tolerated for a short time only and soon lose their effects. Where operation must be postponed instil eserine and cocaine, apply leeches to the temple, hot fomentations, etc., and give a suitable aperient. In subacute cases this line of treatment should be carried out. In chronic cases use eserine and keep the patient under careful observation. In acute cases operate as soon as possible. In subacute cases operation is justifiable as long as there is perception of light. Excellent results in improved vision and freedom from pain may be obtained. In chronic cases where the contraction of the visual field has not passed the centre an operation should be made. If contraction has extended beyond this it is a question whether the eye should not be left to nature, as after prolonged tension the tissues are weakened, and such eyes stand operations badly.

Treatment of Impending Perforation of the Cornea.—In the *Philadelphia Polyclinic*, February 15, 1893, Dr. G. E. de Schweinitz advises, when perforation of the cornea is threatened from extension of an ulcer, that an antiseptic compressing bandage be applied after squares of lint have been laid over the closed eyes and the inequalities of the orbit filled in with sublimate cotton. If hypopyon is present or the ulcer is complicated with pus in the anterior chamber, paracentesis of the cornea must be done. In selected cases when paracentesis is not sufficient Seamich's operation is made. If the hypopyon is tenacious and dough-like, it may be removed with forceps or washed out.

After thoroughly curetting the ulcer, its edges should be pencilled with a one to two thousand sublimate lotion or iodoform dusted upon its surface. A ten- or twenty-grain solution of nitrate of silver applied to the ulcerated surface is valuable. In the majority of infective ulcers of the cornea the actual cautery is the remedy of greatest value. A drop of a two-per-cent. solution of fluorescine should be instilled, which will color green all portions of the cornea denuded of epithelium, and which should be cauterized. The operation is done under cocaine. The lachrymal canal should receive attention and nasal inflammation should be treated. In certain cases it is well to close the duct with the galvano-cautery after the manner of Aschman. In abscess of the cornea it is best to incise the anterior wall and treat as an ulcer.

Squint in Early Childhood.—Dr. Herbert J. Hopkins (*Pittsburg Medical Review*, December, 1892) earnestly advocates that as soon as a tendency to squint is observed in a young child the eyes should be brought under the influence of atropine, the error of refraction determined by the ophthalmoscope, and correcting glasses prescribed. He says,—

"Theoretically there are numerous difficulties in the way of young children wearing spectacles; practically there are none, for it is found on trial that the spectacles are received not as a necessary evil, but as a welcome boon, and are worn with pride, safety, and comfort.

"In those exceptional cases where the trouble is not due to the above cause no improvement can reasonably be expected from measures other than surgical, and here, as in harelip or other deformity, the sooner they are undertaken the better the result."

Nystagmus.—Dr. Harold N. Moyer concludes an article on this subject in the *North American Practitioner*, November, 1892, with the statement that—

"A brief study of nystagmus shows that it occurs in a variety of conditions, the more important of which are:

"1. Congenitally defective vision, microphthalmus, coloboma, etc.

"2. Congenital defect in the motor nervous apparatus without impairment of vision.

"3. Occasionally in functionally nervous disorders.

"4. As an essential condition disconnected from all other diseases of the nervous system.

"5. In certain occupations, notably colliers, who work with the eyes in a constrained position. In these cases the trouble seems to be related to the neural disorders of artisans, and tends towards recovery on change of employment.

"6. Associated with disseminated sclerosis, Friedreich's disease, and rarely with locomotor ataxia.

"7. Accompanying various pathological changes along the base of the brain and in the medulla and pons."

Glaucoma.—*Condensed Abstracts*, November, 1892, reproduces the following on the diagnosis and treatment of this disease:

"Schnabel (*Prager medicinische Wochenschrift*, July 27, 1892) insists that glaucoma is far too frequently treated medicinally, to the neglect of operative procedure. Instillations of eserine cannot save the eye, while early operation may.

"Glaucoma is easily recognizable without special examination. The ophthalmoscope serves for nice diagnosis in cases where operative interference is undertaken as a last refuge and often proves futile.

"The author says, 'Glaucoma always exists where there are violent hemicrania, redness of the eye, wide pupil. Spontaneous dilatation of the pupil in an inflamed eye is a positive sign of glaucoma.'"

DISEASES OF THE LARYNX, NOSE, AND SURROUNDING STRUCTURES.

IN CHARGE OF J. PAYSON CLARK, M.D.,
Physician to the Throat Department of the Boston Dispensary; Assistant Physician for Diseases of the Throat, Massachusetts General Hospital.

Tonsillotomy, with an Analysis of Two Hundred and Thirty Cases. (*British Medical Journal*, March 25, 1893.) By G. Hunter Mackenzie, M.D.

The age and sex of those operated on were as follows:

	Male.	Female.	Total.
Under 2 years	3	2	5
2 to 5 years	15	9	24
6 to 10 "	33	31	64
11 to 15 "	18	24	42
16 to 20 "	15	24	39
21 to 30 "	23	14	37
31 to 50 "	8	8	16
Over 50 years	2	1	3
	117	113	230

It will be seen from this table that the greatest number of patients were between the ages of six and ten, that the males were in excess at puberty, when the proportion of the sexes was reversed. In children up to and about ten years old chronic enlargement was most usually present, later acute recurrent swelling of moderately enlarged tonsils was generally met with. Noisy respiration, disturbed sleep, and bad general health are generally present in the cases occurring in children. The complications were purulent rhinitis, post-nasal catarrh, adenoid growths, etc. In one hundred and fifty-seven cases both tonsils were removed, in seventy-three one tonsil only. The writer thinks the single enlarged tonsil was more often the left than the right. General anæsthesia (with chloroform) was induced in nine cases (aged four to thirteen); a small proportion considering the number of children operated on. A local application of a ten-per-cent. solution of cocaine was made with most of the other children. Profuse or troublesome hemorrhage never followed the operation. In children the local and general results were without exception beneficial. In two cases only (males of seven and ten years) did the tonsils re-enlarge, one in seven months, the other in two years after the operation, and excision was again required. In three adults the tonsillar stumps became inflamed in periods of from three to fifteen months.

The serious disadvantage from which children with enlarged tonsils suffer as regards diphtheria and allied complaints is mentioned.

DERMATOLOGY.

IN CHARGE OF W. A. HARDAWAY, A.M., M.D.,
Professor of Skin Diseases in the Missouri Medical College, St. Louis.
ASSISTED BY
C. F. HERSMAN, A.M., M.D.,
St. Louis.

Colloid Degeneration of the Skin.—G. H. Fox (*Journal of Cutaneous and Genito-Urinary Diseases*, February, 1893) reports a case which, though at first believed to be one of acute disseminate lupus, he now thinks to have been an instance of colloid degeneration, examples of which have been reported by Wagner, Besnier, Liveing, and others. The patient was a man, thirty-two years old, in good health. The eruption consisted of numerous nodules from a pin-head to a split pea in size, occupying the cheeks, chin, and the space between the eyes. A few lesions existed also upon the upper border of the right ear. The smaller lesions were firm, flattened, and dull red in color. About the alæ nasi, where the eruption was very plentiful, a tendency to scaling was noted. Some of the more prominent nodules had a translucent, apple-jelly look, with a whitish point at the apex. Slight umbilication was noted in some lesions. In parts the larger nodules were aggregated to form soft tumors, from which blood and pus could be squeezed. When this was done a peculiar crackling sensation could be felt. The disease had begun six weeks before as bluish-red elevated patches on the cheeks, from which the nodules developed. When the nodules were scraped with a small curette they were found to be of soft consistence, and bleeding was quite free. If a large nodule was firmly pressed a gelatinous mass would pop out, and the cavity thus formed would soon fill with blood. The curette and the dental burr were used in the treatment, and the disease improved. The patient left the city and his physician's care for several weeks, and when seen again the lesions had healed without further treatment, leaving pits like pock-marks.

Subcutaneous Emphysema.—W. G. Smith (*British Journal of Dermatology*, December, 1892) records a case of emphysema of the subcutaneous tissue of the neck, which is of interest from the rarity of its occurrence, aside from wounds of the air-containing organs. The patient was a woman, thirty-two years old, who, during an attack of hæmoptysis not accompanied by violent coughing, suddenly noticed a swelling on the right side of her neck, extending up to the ear. On her admission to hospital this swelling was found to be due to a subcutaneous emphysema. The woman died suddenly during another attack of hæmoptysis. As the author mentions, subcutaneous emphysema developing during tuberculosis of the air-passages is of rare occurrence, and it is therefore all the more to be regretted that no account of the condition found post mortem is appended to this clinical report. It is conceivable that the air might have escaped from a perforation of the apex of the lung, one of the bronchi, or even of the œsophagus.

PATHOLOGY.

IN CHARGE OF ALLEN J. SMITH, A.M., M.D.,
Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas.

Anomalous Chordæ Tendineæ. (Tendons Aberrants du Cœur. *Revue du Médecine*, February 10, 1893.)—Huchard, in a clinical article upon anomalous tendons of the heart, states that they are almost always found in the left ventricle. He divides them for convenience into two classes,—those which produce sufficient phenomena to permit their recognition during life, and those which are latent until they are revealed at the autopsy. The former are generally found to extend entirely across the cavity, either in a direct or in an oblique manner, are sometimes attached to a leaflet of the mitral valve, and are always in such a position as to receive the force of the blood-current. These manifest themselves by symptoms arising from the impingement of the blood-stream upon the tense band; by a sonorous *bruit*, somewhat like the sound of a jews-harp, heard especially towards the right along the xiphoid border, and carried up towards the aorta by a peculiar thrill, vibratory but not purring, systolic in time. The sound is to be distinguished from the sounds of tricuspid origin by its intensity and timbre, and from the sounds of mitral insufficiency, which are blowing in character and are transmitted towards the axilla and back.

In order that these signs be produced it is necessary that the tendinous band be in the course of the blood-stream, and that the ventricular systole should have considerable force. If either of these conditions fail, anomalous chordæ tendinæ of even marked size may be present without producing any evidence of their presence. Thus one is unable to detect such a band if it lie close to the ventricular wall, perhaps extending only one or two centimetres, from one muscular column to an adjacent one, or if it be seated far down in the apex of the ventricle, or if, on account of degenerative changes, either it or the ventricular wall, or both, be flabby and unable to produce the proper degree of tensity for vibration. Huchard has observed a case of cardiac hypertrophy in which the signs of such an anomalous band, evident when the patient first came under observation, disappeared gradually as cardiac asthenia developed. The author points out a source of danger from coagulation of blood on these bands and subsequent embolism. He regards most of these bands as the result of congenital fault; but others, although rarely, seem to be caused by pathological changes, principally atrophic sclerosis of the muscular trabeculæ.

Tape-worm the Cause of Rupture of the Intestine.—Dr. F. Dunlap (*New York Medical Journal*, February 11, 1893) mentions a case of intestinal rupture occurring in a woman of thirty-one years of age, apparently caused by a tape-worm. When first seen the patient complained of violent pains in the left iliac region, followed in several hours by profound collapse.

Rupture of an ectopic pregnancy was suspected, the suspicion being encouraged by the fact that menstruation had been absent for several months. A boggy mass was to be felt in the abdomen, and abdominal section was decided upon and performed. A mass of clot was found in the pelvis, but the pelvic organs were found in a normal condition; nor could any aneurism, which had been thought of, be found. In flooding the cavity a long tapeworm was floated to the surface, and tracing it towards the head, it was found to protrude from a large, ragged rupture in the small intestine. It was fastened about twelve inches above the seat of rupture. Eight feet of the worm were removed from the peritoneal cavity, and about seventeen feet more were passed from the bowel afterwards as the result of an enema. From examination it appeared that there had existed no previous ulceration at the site of the rupture, the ragged gangrenous edges suggesting rather a pressure gangrene. The patient recovered.

CLIMATOLOGY.

IN CHARGE OF GUY HINSDALE, M.D.,
Lecturer on Climatology in the University of Pennsylvania, Philadelphia.

Climate of Arizona. (*Medical Record*, January 28, 1893.)—Dr. W. W. Hibbard, of Phœnix, writes: "Here can be found an unsurpassed number of sunshiny days and dryness of atmosphere,—the days comfortably warm, the nights cool and permitting refreshing sleep. No dews, no fogs, no rapid changes from heat to cold, no decaying vegetation, no rivers, pools, or lakes germinating poisonous miasms,—evenness of temperature and pure water. It is not denied that the summers are hot,—continuously so for three or four months,—but, though the thermometer may range from 105° to 110° F., the summer period is as healthy as any part of the year. During eight months of the year no more comfortable climate can be found. While writing this article (late in November) my office is thrown open as in a delightful June day,—all the windows up, and a soft, balmy breeze is circulating throughout."

Davos Platz.—Effects of Mountain Air. (*Lancet*, December 24, 1892.)—Dr. A. T. Tucker Wise records the case of a physician, aged thirty-one, who was advised by Sir Andrew Clark to winter in the Alps, at Davos. His illness commenced in May, 1891, with cough and profuse hæmoptysis after influenza. This was followed by muco-purulent expectoration, containing tubercle bacilli in moderate numbers. Night-sweats had ceased previous to arrival. The patient had lost twenty pounds in weight, was anæmic, and complained of weakness, shortness of breath, and depression. Physical examination of the left apex showed limited expansion, with marked dulness extending from the clavicle to the third intercostal space. Posteriorly there was dulness over the supra-spinous fossa, and between the

border of the scapula and the spine, on a level with the first and second dorsal vertebræ. From time to time clicking râles were heard, with puerile breathing. Vocal fremitus was not marked on either side.

After the second week the dulness over the upper part of the left lung had completely disappeared, and the patient was rapidly regaining lost ground. Progression towards recovery, with gradual expansion of the chest and gain in flesh and strength, was uninterrupted until February, when the following note was made: Insignificant difference in respiratory murmur; no dulness or râles of any kind; three or four bacilli found in expectoration on January 26; no expectoration since then; pulse 80 to 84.

This case illustrates the rapidity of recovery in lung lesions which is occasionally observed at these elevations. Sir Andrew Clark regarded the consolidation, not as miliary tubercle, but rather as being due to a caseous condition of disease. This was subsequently borne out by the march of the affection. No consolidation depending on a miliary deposit would have cleared up so readily. The patient has now (October, 1892) resumed his practice, is in robust health, weighs one hundred and eighty-seven pounds (gained twenty-eight pounds in Davos), and presents no sign of disease whatever with the exception of a faint expiratory harshness heard over the left apex, which would scarcely attract the attention of any auscultator unacquainted with the previous facts. The climatic advantages at high altitudes in relation to pulmonary disease are, to put it shortly, as follows: 1. Dryness of the air and its comparative freedom from micro-organisms and atmospheric dust, entailing a lessened liability to catarrh and irritation of the bronchial tract and drying the lungs. 2. Profusion of sunlight; with the low temperature the heat of the sun is easily borne and the violet rays of the spectrum act chemically on the blood, increasing the hæmoglobin. 3. Diminished barometric pressure; this facilitates chemical action in the blood and tissues, favors vaporization of moist secretions in the lungs, and aids pulmonary circulation and expansion. 4. The general stimulus of high levels, producing exhilaration and an increase of nutrition.

REVIEW OF ITALIAN, SPANISH, AND PORTUGUESE MEDICINE.

IN CHARGE OF A. M. FERNANDEZ DE YBARRA, M.D.,
New York,
Corresponding Member of the Medico-Chirurgical Academy of Madrid, Spain, the Argentine Medical Circle of Buenos Ayres, South America, and the Society for Clinical Studies, of Havana, Cuba.

The Great Therapeutic Influence of the Size of the Doses. (*Gaceta Médico-Farmacéutica*, New York, November, 1892.) By A. M. Fernandez de Ybarra.

In a somewhat peculiar but well-written and sound contribution to our knowledge of therapeutics, the author treats of the above subject. He

contends that there are several other important factors, besides the selection of the medicine to be given, which practitioners should bear in mind in treating their patients, principally among them the size of the dose and the investigation of the origin and preparation of drugs, giving practical examples. We get firmly rooted into our heads, for instance, the idea that ipecac is an emetic, and never think of employing it to soothe gastric irritation, which can be done by simply administering it in minute doses; the same is true of tartar emetic, which in doses of from one-sixteenth to one-sixth of a grain is an expectorant and diaphoretic. We consider it an axiom that aloes is cathartic, rhubarb purgative, digitalis a heart tonic, sweet spirit of nitre a diuretic, and Fowler's solution of arsenic an irritant poison to be used only when the direct effects of arsenic are desired, yet aloes and rhubarb are valuable tonics in very small doses, digitalis in a large dose is an emeto-cathartic, sweet spirit of nitre an excellent diaphoretic, and Fowler's solution an anodyne of the irritated gastric mucous membrane when given in very minute doses.

Other points on which the author rightly dwells as worthy of particular attention are: the modifications produced in the system by a prolonged change of climate, the temperament, sex and age of patients, and the time at which the medicine is given.

The same article was written by the author in English, and published in the *New York Medical Record*, April 15, 1893.

Extra-Uterine Pregnancy; Laparotomy at the Eleventh Month of Gestation; Cure. (*El Progreso Médico*, Havana, April, 1893.) By Dr. Gabriel Casuso.

A negress of good constitution, thirty-four years old, began to menstruate when fourteen, and the menses continued regularly afterwards every month; she had three full-term children at her fifteenth, sixteenth, and nineteenth years of age respectively; in May, 1892, she missed her menstrual period, and suffered the usual symptoms of pregnancy; at the end of the ninth month she had loss of amniotic fluid, parturient pains, but no delivery of the product of conception took place; forty-eight hours after abundant secretion of milk appeared, accompanied by chills; she remained in bed four days, and was sure of having felt the fœtal movements on several occasions prior to the day of the symptoms of delivery, but since then she did not feel them; there was no further incident.

On the 10th of March, 1893, Dr. Casuso performed cœliotomy and found the dead fœtus perfectly formed, weighing six and a half pounds, but in a state of maceration; the placenta was adherent to the left Fallopian tube, at the level of its fimbriated extremity; the ovary of that side was elongated by the tightness of the Fallopian tube bearing the weight of the fœtus; the broad ligament served to the child as external covering, and was thickened and resisting, very much like the outer membrane of a dermoid cyst. Enucleation of the left uterine appendages had to be performed.

The patient left her bed in a few days entirely cured. It is to be regretted that Dr. Casuso was not apprised of this instructive case in time to save the life of the child.

FORENSIC MEDICINE.

IN CHARGE OF LORENZO D. BULETTE,
Of the Philadelphia Bar.

LEGAL RESPONSIBILITY FOR REFUSING TO SUMMON MEDICAL ASSISTANCE.

NUMEROUS instances of the death of persons due to the neglect or refusal, either of the patient himself or those in charge of him, to call in skilled medical assistance, are from time to time brought to public attention. Such failure to call in or supply medical aid is due in most cases to the existence of conscientious scruples against such a course, and to a firm faith in the efficacy of prayer, without other or further personal effort, to heal the sick; and the question arises, What is the liability, civil or criminal, of the persons chargeable with such refusal?

The point was judicially determined in England[1] at the trial of a husband and wife on an indictment for manslaughter in causing the death of their sick child, through their refusal to provide it with skilled medical attention.

The courts have decided that the services of a physician are to be classed among what are termed in law necessaries, and accordingly the prosecution in this case was instituted on the authority of Russell on Crimes,[2] which declares it to be an indictable offence to refuse or neglect to provide sufficient food or other necessaries for any infant of tender years unable to provide for or take care of itself, whether such infant be child, apprentice, or servant, whom the party is obliged by duty or contract to provide for, so as thereby to preserve his health.

The parents were members of a sect who called themselves "Peculiar People." This sect have religious objections against calling in medical assistance or giving medicines in case of sickness; and they justify this course by a literal interpretation of the text in the fifth chapter of the General Epistle of St. James, fourteenth and fifteenth verses: "Is any sick among you? let him call for the elders of the church; and let them pray

[1] Regina *vs.* Wagstaffe, 10 Cox C. C. 530 (1868).

[2] Page 80.

over him, anointing him with oil in the name of the Lord: and the prayer of faith shall save the sick, and the Lord shall raise him up; and if he have committed sins, they shall be forgiven him."

At the trial the following facts were disclosed by the evidence: The child, which was fourteen months old, had always been very delicate, and coughed a good deal. When it became worse the elders were called in; they anointed its breast with oil, where the pain was, and offered up prayers. The child became better after that, but on becoming worse it was again anointed, and the parents gave it barley-water, new milk, corn-flour, port wine and gruel, and occasionally a little brandy-and-water. Of this, however, it did not take much, and finally died. The mother devoted most of her time to it during the fortnight preceding its death. The father was at work during the day, but attended to the child in his spare time; he was very kind and affectionate towards it. No doctor was called in. A witness, one of the sect, testified, "Not since we have been living to the Lord have we called in a doctor in case of illness, but before that we did. We are not pressed by the church not to call in a doctor, but we are taught to have faith in God. I have been afflicted severely at times with small-pox and other diseases, and have not had medical assistance. I have always called in the elders."

This witness was questioned by the court as follows: "Why don't you call in a doctor?" *A.* "Because we believe so much in the healing power of God, and have confidence that He will raise us up again. We have many living witnesses." "Would it be a sin to call in a doctor?" *A.* "I cannot say that, but still we have confidence in God that He will restore us according to His word." "You think it superfluity, but not sin?" *A.* "Yes." "You believe that God will answer your prayer, and that He is able to heal without the assistance of any mortal?" *A.* "Yes; we have proved it for ourselves many times." "I am not at all suggesting a doubt of your perfect honesty, but I want to know what you really think on the subject. Is the oil used because you think it is any good?" *A.* "We read about it in St. James's Epistle. We don't say anything against calling in a doctor; he is all very well for those who do not put their trust in the Lord."

A post-mortem examination disclosed that the child had suffered from acute inflammation of the lungs on both sides. On one side the inflammation had been going on eight or ten days, and on the other about five days. The child in all other respects had been quite healthy; and in all probability its life would have been saved if medical advice had been obtained early. The defendants thought that the child's death was due to teething. They did not know that the disease was inflammation. The child did not seem to suffer a great deal.

The court said, in charging the jury, that in order to make out the offence of manslaughter in a case of this description the proposition to be established was, that the prisoners had charge of the child in question, who would from its tender age not be able to take care of itself; that they had the means of

providing things reasonably fit for it, and that they were guilty of gross and culpable negligence in not resorting to those means for its benefit by lack of which its death was occasioned. The question was whether the jury were satisfied on the evidence that the child came to its death by the gross and culpable negligence of its parents; and that was a very wide question. If a parent had the means of supplying his child with food and were to keep it starving, even under a notion that he had a religious duty imposed upon him to starve it, and if it could be made out that that was an insane and morbid belief, everybody would come to the conclusion that there must be a conviction, for all the reasoning in the world would not justify a man in starving a child to death. But when a jury had to consider what was the precise medical treatment to be applied to a particular case, they got into a much higher latitude indeed. At different times people had come to different conclusions as to what might be done with a sick person. Two hundred years ago, if a child was afflicted with the king's evil, the popular feeling was, regardless of medical science, to have it touched with the royal hand, because that might result in effecting a cure. Again, in some Catholic countries, a custom obtained of taking a child laboring under a disease to a particular shrine, under a belief that that was the best course to adopt with a view to effect a cure. In such cases a man might be convicted of manslaughter because he lived in a place where all the community was of a contrary opinion, and in another he might be acquitted because they were all of his opinion. There is a very great difference between neglecting a child in respect to food, with regard to which there can be but one opinion, and neglect of medical treatment, as to which there may be many opinions. If a man does his best, according to his knowledge, with respect to food, it would be for a jury to consider whether they would stamp his conduct with the imputation of gross and culpable negligence. An opinion might be so absurd in itself that it could not have been honestly obtained, and when that was the case, of course all pretence of having acted for the best, because that was considered to be a matter of faith, would be removed from the case. But, in the case of an opinion merely put forward as a blind or a screen for misconduct, of course the good sense of a jury would treat it as if no such belief was suggested. He thought it right to remind the jury of the text in the last chapter of the General Epistle of St. James, on which the views of persons like the defendants were founded.

It was only right to refer to that, and he thought he might go so far as to say the construction put upon that text by the prisoners—and he spoke with profound respect for any belief honestly entertained in religious matters—was as sensible and reasonable as to suppose that if a man broke his leg it could be cured by calling in the elders of the church and having the limb anointed with oil. Was it intended by God Almighty that persons should content themselves by praying for this assistance without helping themselves, or resorting to such means as were within their reach for that purpose? He believed that the prisoners were honest in the belief they

professed; and the jury, under the evidence on that subject, would be of the opinion that they did not act with dishonesty in the matter. He thought, on the contrary, this was a case where affectionate parents had done what they considered best for their child, and had given it the best of food.

The jury returned a verdict of not guilty; and parliament at once passed a statute enacting that "When any parent shall wilfully neglect, among other things, to provide medical aid for his child, being in his custody, under the age of fourteen years, whereby the health of such child shall have been or shall be likely to be seriously injured, he shall be liable to summary conviction," etc.[1]

Under this statute a father was convicted of manslaughter, on facts similar to those of the preceding case; and it was held to be no defence to the charge of manslaughter that the parent so neglected, not from any intention to disobey the law, but from a conscientious religious belief that it was wrong and unnecessary to call in medical aid.

The father was one of the sect of "Peculiar People." The child was but little more than two years old, and in the custody of its father. It had been ill and wasting away for eight or nine months before its death; and during the whole period of the child's illness the father did not procure any skilled medical treatment for the child, but left it to the charge of women who belonged to the sect, and at intervals called in H., an engine-driver, one of the elders, who prayed over the child and anointed it with oil. H., when consulted by the father as to what should be given to the child, thought it was teething, and advised the prisoner to give it port wine, eggs, arrow-root, and other articles of diet which he thought suitable for a child suffering from such a complaint, all of which were supplied accordingly. There was no evidence that the treatment was mischievous, and, though this was probably not logically consistent with the doctrines of his sect as described by him, the court saw no reason to doubt that it was all done in perfect sincerity.

H., on being asked by counsel for the prosecution whether if one of their sect met with an accident, such as a broken bone, their principles would prevent their calling in a surgeon to set it, answered that they would probably call in a surgeon in such a case, but it had never yet arisen. He was asked whether they trusted to nature in cases of childbirth. He said they did not call in midwives, which would be against their principles, but that several sisters of their persuasion were as skilful as any midwives, and that they assisted the woman in labor.

H. was further asked whether he had not himself, on the trial of one of their sect, promised that in future medical advice should be called in when necessary. He explained that in that case the disease was infectious, and that he understood the judge to say that the law forbade them to endanger the lives of others; and as it was one of their principles to obey the law,

[1] 31 & 32 Vict., cap. 122, § 37 (1868).

he had given a pledge that they would call in medical advice where the disease was infectious, which pledge they had kept.

The judge here interposed to ask him whether he would now give a similar pledge in cases where the sick person was a helpless infant, taking the law from him to be that, though an adult who could judge for himself might refrain from calling in skilled medical advice without transgressing any law, those who had charge of a helpless infant were bound to procure medical assistance where it was necessary. If he would give such a pledge, the court had no doubt the prosecutors would be perfectly satisfied and give no further evidence. He would not, however, do more than promise that he would bring the point before the next assembly of his church. The prosecution therefore proceeded.

It was admitted on the part of the prosecution that the child was kindly treated, kept clean, and furnished with sufficient food, and nursed kindly by the mother and the women of the sect.

The evidence showed that the prisoner had sufficient means to procure skilled advice; that neither he nor the elder had any competent skill; that the disease of which the child died had nothing whatever to do with teething, but was a chronic inflammation of the lungs and pleura, which, though of long standing, might very probably, though not certainly, have been cured at any time if competent medical advice had been obtained, especially in the early stages of the complaint.

The prisoner said in his own defence that he sincerely believed that by abstaining from calling in medical aid he gave the child the best chance of recovery, as, if he showed a want of faith, he could not rely on the promise which he thought was given.

The court instructed the jury that the law casts on the father who has the custody of a helpless infant a duty to provide, according to his ability, all that is reasonably necessary for the child, including, if the child is so ill as to require it, the advice of persons reasonably believed to have competent medical skill, and that if death ensues from the neglect of this duty it is manslaughter in the father neglecting the duty; that it was no defence that the prisoner sincerely believed that he ought not to provide skilled medical advice, nor that he believed that he was doing the best for the child if he had not in fact competent skill and knowledge himself. The jury found as facts that the prisoner neglected to procure medical aid for the helpless infant when it was in fact reasonable so to do and he had the ability; that death was caused by such neglect; that the prisoner *bona fide*, though erroneously, believed that medical advice was not required for the child; and *bona fide* believed that it was wrong to call in medical aid. A verdict of guilty was accordingly entered.

On appeal, Chief Justice Coleridge, delivering the opinion of the Court of Criminal Appeal, said, "I think this conviction should be affirmed. Were it not for the statute I should have much doubt about this case, but the statute is a strong argument in favor of conviction. I understand the

enactment to mean that if any parent intentionally, that is, with the knowledge that medical aid is to be obtained, and with a deliberate intention abstains from providing it, he is guilty of an offence. Under that enactment, upon these facts the prisoner would clearly have been guilty of the offence created by it. If the death of a person results from the culpable omission of a breach of duty created by the law, the death so caused is the subject of manslaughter. In this case there was a duty imposed by the statute on the prisoner to provide medical aid for his infant child, and there was the deliberate intention not to obey the law, whether proceeding from a good or bad motive is not material. The necessary ingredient to constitute the crime of manslaughter existed, therefore, in this case, and for that reason this conviction ought to be affirmed."

In a few States there have been occasional prosecutions in cases of this sort, unsuccessful, however, in the absence of a special statute, except where the disease was contagious, as diphtheria, scarlet fever, and the like.

The law permits the utmost latitude for the indulgence of religious belief, yet when that belief reduced to practice seriously endangers the well-being of the people, it becomes a violation of that supreme law which is the welfare of the people, and in the presence of which other laws must yield. Accordingly, in the case of contagious diseases, a vigorous prosecution, by the health authorities, for endangering the public health, under the authority of the maxim, *salus populi suprema lex*, followed by a substantial fine on conviction, has usually had the desired effect in causing those parents, who were otherwise disposed to have their infected children cured by faith alone, to summon skilled medical assistance.

But in the case of non-contagious diseases it would not, as we have seen, in the absence of a special statute so declaring it, be an indictable offence in parents and others having charge of infants to refuse, because of religious scruples, to call in a physician to give them necessary medical attention. No judge sitting in a criminal court would be justified in such case in saying that a parent who exercised his best judgment, though a perverted one, in dealing with his sick child by nursing, instead of calling in a physician, was guilty of criminal neglect. The common law, therefore, is not, in this class of diseases, a sufficient safeguard against the new and increasing danger to public health occasioned by the existence and numerical increase of sects, calling themselves by a variety of appellations, but who refuse to avail themselves of skilled medical assistance in sickness, professing to rely on other than the usual medical agencies to restore them to health. The power to remedy this defect of our law is with the legislature; and the exercise of this power, by making it a criminal offence to neglect or refuse to employ agencies of known curative powers where infants and other helpless persons are involved, will, as experience with the operation of the British statute has shown, have a salutary effect in correcting the abuses thus arising from the putting into practice, instead of passively indulging, perverted religious opinion.

BOOK REVIEWS.

INTERNATIONAL CLINICS: A Quarterly of Clinical Lectures on Medicine, Neurology, Pediatrics, Surgery, Genito-Urinary Surgery, Gynæcology, Ophthalmology, Laryngology, Otology, and Dermatology. Edited by J. M. Keating, M.D., LL.D., Judson Daland, M.D., J. Mitchell Bruce, M.D., F.R.C.P., and D. W. Finlay, M.D., F.R.C.P. Volume IV., Second Series, 1893. Philadelphia: J. B. Lippincott Co.

A contribution to the dissemination of medical knowledge from fifty-two clinical teachers, forty-two American, eight British, and two French, comes this the closing volume of the second series of the *International Clinics*, with almost four hundred pages of material. Among the names upon the list of contributors stand such as Ashhurst, Balzer, Bristowe, Dana, Duhring, Gerster, Guyon, Hamilton, Heath, Keen, Mundé, Pepper, Robinson, and Tyson, with others of scarce less note and perhaps equal ability.

The serious, patriarchal features of Boston's grand old man, Henry I. Bowditch, the one man, if one man may be named, who forced upon the medical profession the employment of the operation of thoracic paracentesis, impress his studious steadfast character upon the reader, and as a frontispiece dignify the pages of the book. Dr. Frederick I. Knight, of Boston, contributes a biographical sketch of Professor Bowditch, who died in January of 1892, at the ripe age of eighty-four years, after a life filled with work and honor among his own people and within his own profession.

Of the fifty-one clinical articles, eleven are included in the section on medicine, nine in that on neurology, two under pediatrics, eleven under surgery, and four under genito-urinary surgery; there are seven lectures of a gynæcological and obstetrical nature, two ophthalmological, three rhinological, and two dermatological.

The opening medical article is an admirable lecture by Dr. James Tyson upon the relations between renal and circulatory disease, in which the association of left cardiac hypertrophy with interstitial nephritis forms the principal topic of discussion. Of the other notable medical lectures that of Dr. John Syer Bristowe upon atelectasis pulmonum and the difficulties in its recognition as a complication, that of Professor T. J. Mays upon angina pectoris, that of Professor Charles G. Stockton upon gastric ulcer, that of Professor William H. Porter upon rheumatism and its relations to renal diseases, and that of Professor I. E. Atkinson upon sciatica are worthy of especial note.

The section on neurology is not as well represented as usual, not so much in the number of articles as in the excellence of the individual contributions. As a rule the neurological portion of the volume has been the best prepared and ablest part of the book; a number of the lectures in this instance are incomplete and sketchy, and not of the grade to be included in such a publication as the *Clinics*. While in frankness this must be said, it must be added that the average of the lectures in this section is nevertheless good, and several of the papers are exceptionally well prepared and considered,—notably that upon multiple neuritis and its relations to diseases of the spinal cord by Dr. James J. Putnam, that by Dr. G. A. Gibson on cerebral tubercle, that by Dr. Warrington Haward on delirium tremens and other forms of surgical delirium, and that by Dr. Graeme M. Hammond upon facial paralysis.

The two lectures in the section on pediatry are contributed by Mr. R. J. Godlee and Dr. George Carpenter, both London teachers; and as a coincidence both lectures are directed to the subject of pleurisy in children, especially in relation to empyema, that of the former gentleman dealing particularly with the surgical treatment of the latter condition, that of the latter dwelling upon the diagnostic part of the subject with considerable fulness.

In the surgical section in a most charming manner Mr. Christopher Heath discusses the operation of suprapubic lithotomy, a procedure to which he evinces his growing inclination. Mr. Heath's article is *facile princeps* among the general and genito-urinary surgical contributions; and his pleasant and easy style render it a noteworthy article, whether the subject-matter is of particular interest to the reader or not. Dr. F. S. Watson contributes the second lecture of the series of three upon hypertrophy of the prostate, in which the treatment of the condition with that of the coincident cystitis forms the bulk of the matter. The use of the catheter to remove residual urine constitutes the essential feature of the treatment detailed, the lecturer taking pains to instruct upon the form of instrument used and the proper method of employment. In this connection one must yield to the temptation to call more than passing attention to the remarks of Professor Guyon in his contribution upon the resistance of the bladder to infection. His now famous opinions as to the importance of residual urine in the production of cystitis are called forth in this lecture in the study of a case in which a suppurating mass attached to the right wall of the uterus had been emptying itself through the bladder for three years without infecting the latter or giving rise to any symptoms of cystic inflammation. M. Guyon does not believe that there is anything abnormal in this, and states that such resistance to microbian infection is a natural attribute of the normal bladder-wall, and that before infection can take place at least one of these conditions must obtain,—*retention*, *congestion*, or *traumatism*. Of these the last is of least importance, wounds made in opening the bladder or scraping and burning the vesical mucous membrane rarely leading to inflammation even when micro-organisms are present. Experimentation, as well as clinical observation, tends to show, however, that a congested mucous membrane readily leads to microbic invasion, and no other condition so favors the penetration of the parts by micro-organisms. The importance of urinary retention in the production of cystitis is considerable, the condition affording as factors in the rôle of pathogeny, stagnation of the urine, congestion of the vesical mucous membrane, loss of the epithelial surface of the latter, and vesical paresis from distention.

There are a number of other surgical lectures of decided value and interest, as that of Dr. Balzer upon the treatment of chancroid; and the entire gynæcological section is filled with excellent material. Nevertheless the lack of space must prevent any but a passing notice of any. The contribution by Edward P. Davis upon post-partum hemorrhage, that of Dr. Amand Routh upon diseases of the female urethra, that of Dr. W. E. Ashton upon endometritis, are all valuable additions to the literature of these subjects. One of the most sensible and most commendable articles in the whole volume is embodied in the pages devoted to Dr. H. C. Coe's lecture on contra-indications to minor gynæcological operations. The value of an operation upon a torn cervix or perineum is not in the beauty of the repaired structures but in the relief of the symptoms present, depending, perhaps, on some of the resultant conditions. A note of warning in these days of universal operations is no step backward.

The rest of the volume is in full accord with the parts mentioned as to the excellence of material. It is not improbable that a want is felt by many of the readers of the *Clinics* for fuller special departments; that is an objection mentioned several times to the reviewer by specialists. Yet space is probably wanting even in a volume of nearly four hundred pages, as well as in a review of a few pages, and some subjects must be overlooked in both. A. J. S.

System of Diseases of the Ear, Nose, and Throat. Edited by Charles H. Burnett, A.M., M.D., Emeritus Professor of Otology in the Philadelphia Polyclinic; Clinical Professor in the Woman's Medical College of Pennsylvania; Aural Surgeon to the Presbyterian Hospital, etc., Philadelphia, Pa. In two volumes, profusely illustrated. Philadelphia: J. B. Lippincott Company, 1893.

Volume I. of this System more than fulfils the expectations of those who have been anxiously awaiting its appearance. There is no book like it in the English language, and it fills a long-felt want. Eminent specialists have contributed articles on the various diseases to which the ear, nose, and throat are subject, and the text is enriched with twenty-four plates and more than two hundred and forty figures. The authors referred to are representative men from all parts of the world.

The article on the "Anatomy and Physiology of the Ear, and Tests of Hearing," by W. S. Bryant, of Boston, is more completely illustrated than any article extant on the subject. The illustrations are obtained chiefly from Quain, Politzer's new work, and Gruber's last edition. In the preparation of these illustrations the publishers have spared no expense, and they are complete in design and execution. H. Richards, of Des Moines, Iowa, contributes a careful paper on "The Examination of Patients, with the Instruments needed therein, and the Methods best suited for their Employment." The illustrations in Edward B. Dench's article on "Congenital Malformations, Cutaneous Diseases, Morbid Growths, and Injuries to the Auricle," are original, and were prepared especially for this work. The text is all that could be desired.

The article by Robert Barclay, of St. Louis, Missouri, on "Acute and Chronic Otitis Externa," is copiously illustrated, and gives evidence of the author's very thorough knowledge of this subject. No such article on Oto-mycosis is in existence. It is copiously illustrated. Sir William B. Dalby, of St. George's Hospital, London, has contributed a most valuable article on "Foreign Bodies and Osseous Growths in the External Auditory Canal." This article is also enriched by original drawings. Gorham Bacon's article on "Diseases and Injuries of the Membrana Tympani and Acute Otitis Media" is especially interesting and instructive. It has seven colored views of the membrana tympani which have never before appeared in print, as well as a half-tone photograph of a section of the temporal bone, all prepared by the author for this work.

The reviewer need go no farther to convince himself that this book is a most valuable contribution to the literature of the subject, and an authority whose pages must often be consulted.

Samuel Sexton, of New York City, in speaking of "Chronic Catarrh of the Middle Ear," not only lays special stress on the preventive hygiene of this disease, but also gives all the latest information as to the surgical treatment. Christopher J. Colles, also of New York, treats of the "Middle Ear" and the symptoms which arise from it in a number of the more common diseases. Charles H. Burnett, in writing on "Chronic Purulent Otitis Media," contributes a number of original figures, and a complete description of excision of the diseased membrana tympani and the ossicles in chronic otorrhœa. The large experience that this author has had should lend additional weight to his valuable writings. Frederick L. Jack, of Boston, Mass., in dealing with "The Removal of the Stapes in Chronic Catarrh and Chronic Suppurative Otitis Media," records the latest advances in aural surgery, and his article is also enriched with original drawings. Clarence J. Blake, of Boston, has contributed a valuable article on "Acute and Chronic Inflammation of the Mastoid Portion of the Temporal Bone," embodying a number of original ideas, illustrated with his own drawings. Edward D. Spear's article on "Diseases of the Internal Ear" contains valuable information on an abstruse but important subject. Alexander W. McCoy, in writing of the "Anatomy and Physiology of the Nose and the Naso-Pharynx," is concise, entertaining, and instructive. His illustrations are admirably chosen.

Charles A. Oliver's article on "Ocular Lesions in Aural Diseases" contains much valuable information. Samuel G. Dabney writes clearly and to the point in regard to "Methods of the Examination and Diagnosis of Diseases of the Nose, Naso-Pharynx, and Larynx," and contributes an original colored plate of the normal laryngeal image and the posterior nares. Clinton Wagner, in speaking of "Local Therapeutics in Diseases of the Nares, Naso-Pharynx, and Larynx," adds considerably to the value of his paper by copious illustrations, for the most part taken from photographs. F. H. Bosworth lays special stress on the "Prophylaxis of Acute Rhinitis," and his words should have great weight in preventing this troublesome complaint. Carl Seiler, in writing on "Influenza and American Grippe," describes very minutely the "Pathology and Treatment of Grippe." R. W. Seiss deals very thoroughly with chronic hypertrophic rhinitis and eustachian salpingitis. While no article could be selected for especial praise in this valuable volume, John N. Mackenzie, of Baltimore, discusses systematically "Atrophic Rhinitis," and lays special stress on the pathology of this disease. The article of George W. Major, of Montreal, Canada, on "Lupus, Tuberculosis, Syphilis, Glanders, and Diphtheria," is a most scholarly contribution, and shows evidence not only of large practical experience with these diseases, but also of a thorough search through the literature of the subject. E. C. Baber, of Brighton, England, writes on "Foreign Bodies in the Nose and Epistaxis." The book concludes with an article by Joseph H. Bryan, of Washington, D.C., on "Diseases of the Accessory Sinuses of the Nose."

No book could be more carefully prepared than this volume has been, and we can heartily recommend it to the medical profession. Volume II. will shortly appear, and will contain upward of fifty pages more than the volume already issued.

THE ELEMENTS OF HUMAN PHYSIOLOGY. By Ernest H. Starling, M.D., M.R.C.P., Joint Lecturer of Physiology at Guy's Hospital, London. One hundred illustrations. 12mo, 437 pages. Cloth, $2.00. Philadelphia: P. Blakiston & Co., 1892.

In this little book Dr. Starling has given us a concise and clearly-written exposition of the elements of physiology. In the first chapter he deals in an excellent manner with the general mechanism of the body, and thus admirably prepares the beginner for a study of the special functions; in the second chapter he treats of the chemical constituents of the body, their properties and classification; and then successively considers the blood and lymph, the contractile and irritable tissues, the vascular mechanism, digestion, respiration, etc. There is also an appendix, in which are described certain of the electrical instruments which are in common use in physiological investigation.

Dr. Starling has wisely omitted histology from the text, this being justified by the advanced methods of teaching now being pursued in our leading medical schools.

Notwithstanding the marked brevity of the book there are here condensed a vast number of physiological facts; indeed, it is almost of the nature of a compend. It is especially noticeable that it is remarkably well up to date,—in many respects more so than many of the pretentious text-books. The illustrations are sufficient in number and quality, and some of them are original.

The manual is too elementary to be of real value to medical students, but it is admirably adapted to the wants of students in biology.

DISEASES OF THE EYE, EAR, THROAT, AND NOSE. A Manual for Students and Practitioners. By Frank E. Miller, M.D., James P. McEvoy, M.D., and John E. Weeks, M.D. Lea Brothers & Co., 1893.

This manual comes under "The Students' Quiz Series," and for the purpose it was written fills the requisite better than any book with which we are acquainted. The book is arranged in "question and answer" form. A capital thing for students, and it will also serve to refresh the memory of the busy practitioner.

INTERNATIONAL
MEDICAL MAGAZINE.

Vol. II.] JULY, 1893. [No. 6.

ORIGINAL COMMUNICATIONS.

AN ANALYSIS OF ONE HUNDRED POST-MORTEM EXAMINATIONS ON CHILDREN SUFFERING FROM TUBERCULAR DISEASE, WITH NOTES ON SOME SPECIAL FEATURES OF THE PATHOLOGY AND PATHOLOGICAL ANATOMY OF TUBERCLE IN EARLY LIFE.

BY J. WALTER CARR, M.D.,

Physician to Out-Patients, Victoria Hospital for Children, Chelsea, England.

PART I.

THE cases are compiled from the post-mortem records for about four years of the Victoria Hospital for Children, Chelsea, and every instance, either from the medical or surgical cases, in which any tubercular mischief, however slight, was found at an autopsy, is included. All caseation of glands was considered tubercular, for although strictly, perhaps, this should not have been done without finding the tubercle bacillus in each case, yet practically we must always regard the presence of caseous material in a child as a potential source of general tuberculosis, especially as inoculation experiments show that the smallest portion of it is capable of setting up tuberculosis in susceptible animals; in fact, in association with so-called scrofulous tendencies, caseation must always indicate that tuberculization has commenced.

The one hundred cases do not represent all the children who died with tubercular lesions in the hospital during the period under consideration, for in about one-third of the total number of deaths no post-mortem was obtained, and in a few instances no notes of autopsies have been preserved; nevertheless the percentage of children with tubercular disease among the

total number of deaths would not probably be materially altered even could a post-mortem record have been obtained of every case.

For eighty-five of the one hundred autopsies I am personally responsible, most of the others were performed by my colleague, Dr. Wallis Ord, to whose kindness I am indebted for the use of his notes.

The first question of interest which naturally presents itself is, What proportion do the tubercular cases bear to the total number of deaths? Within the period during which the one hundred cases were collected altogether three hundred and thirty autopsies were recorded, so that tubercular disease was found in 30.3 per cent. of all the examinations. In only seventy-nine cases was the tubercular mischief the actual cause of death, in ten of the others it was advanced, and would certainly have proved fatal ere long, in the remaining eleven it was, with one exception, limited to strumous bone-disease or to caseation of the internal lymphatic glands. It is obvious that the number of cases in which tubercular disease could with any certainty be diagnosed during life would be smaller than that found post mortem, and that therefore—especially in children—any statistics as to the frequency of tuberculosis, not based on actual autopsies, must be comparatively valueless.

Thirty per cent. of the total death-rate probably represents fairly accurately the proportionate mortality from tubercle in children, at any rate among the class from whom hospital patients are recruited, and it does so the more correctly because at the Victoria Hospital there is no age limit such as obtains in some children's hospitals, and which to a large extent includes babies; infants are admitted practically without restriction, as is sufficiently shown by the fact that two hundred and two of the three hundred and thirty autopsies were upon children under two years old. True, no deaths from scarlet fever, measles, or whooping cough are included, but as a rule these constitute but a small percentage of the total number of deaths among children, besides often proving fatal owing to tubercular sequelæ, whilst, on the other hand, the figures given include probably an undue proportion of deaths from diphtheria.

Turning now to the proportionate mortality from tuberculosis at different ages we get the following result:

	Autopsies.	Tubercular Cases.	Per Cent.	
Under 7 months	79	7	8.8	19.5
Between 7 months and 1 year	54	19	35.2	
" 1 year and 2 years	69	21	30.4	
" 2 years and 3 years	33	14	42.4	
" 3 years and 4 years	30	16	53.5	
" 4 years and 12 years	65	23	35.4	
	330	100	30.3	

These figures, though taken from such a comparatively small number of cases, agree closely with some given by Dr. Landouzy (*Revue de Médecine*, 1888), who estimates the mortality from tuberculosis in Bris as,—

Under 1 year	1 death in 6.
Between 1 and 2 years	1 " 4.
For each year between 2 and 5	1 " 3.

Still more remarkable is it that Dr. Shuges (*Lancet*, ii., 1888, p. 991), from the statistics of the Children's Hospital, Great Ormond Street, finds four hundred and thirty-four deaths from tubercle in a total of fourteen hundred and twenty among children under thirteen years of age, or 30.5 per cent., almost identical with my own figure. Hirschberger declares that twenty-five per cent. of all children dying under one year of age die of tuberculosis. On the other hand, it is curious that Rilliet and Barthez, in their "Maladies des Enfants" (third edition, by Barthez and Sanné), hold that tuberculosis is very rare in children under one year; probably it is comparatively infrequent among those under seven months old, more so even than the figure, 8.8 per cent., would indicate, for of course but few of the many children who die during the first few weeks of life become hospital in-patients, and also of the deaths, chiefly from marasmus, congenital syphilis, and summer diarrhœa, certified among the out-patients, fully a half are under seven months old; in fact, the earliest age at which I have met with tubercular disease post-mortem has been three months, three of my cases dying at that age. The observations of others also show that to find tubercular mischief in children dying earlier than this is quite exceptional; hence we may infer —an inference supported by post-mortem examinations on young animals —that tubercular mischief must, to say the least, be rarely present at birth. After the first six months of life the number of tubercular cases increases rapidly, between seven weeks and four years of age varying from thirty to fifty-three per cent. of the total number of deaths. After four years the figures for individual years are too small to be of any value.

In regard to sex, there were fifty-seven males and forty-three females, an inequality due entirely to the cases of tubercular meningitis, twenty-six of which were males and only eleven females; a similar excess of males over females in this disease in children is recorded by Rilliet and Barthez (fifty-six to forty-four), and at all ages by Fagge (eighty to thirty-seven). Can it be that the greater liability of males to blows and injuries to the head has some influence in determining the more frequent incidence in them of tubercular disease upon the cerebral membranes?

As regards family history, very little importance, indeed, can, I think, as a rule be attached to it among the lower classes; their knowledge is so indefinite, their statements so inaccurate, phthisis so common a disease, and consumption a name with such a strong hold upon the public mind, that statements as to its presence or absence among relatives are open to fallacies on every side. In how many cases of tubercular meningitis, for instance, have the parents any notion as to the tubercular nature of the disease? and, on the other hand, can even one per cent. of cases of so-called "consumptive bowels" among the lower classes be considered as tubercular? Much also will depend upon the extent to which the medical man pushes

his questions. How many families have a record entirely free from tubercular disease if only the investigation is and can be sufficiently extensive? Reliable family histories must be looked for from private and not from hospital practice. On the other hand, a definite history of phthisis in father or mother may probably be generally regarded as true; in nine of the cases one parent was said to have died of phthisis, and in eleven others there was fairly good evidence that one of them was suffering from it; in some it was evidently very advanced, and in several their own parents or brothers and sisters were said to have died of it. A history of phthisis in one parent in twenty per cent. of the cases can hardly be explained away as a mere coincidence; in eleven instances the mother was affected, and in nine the father. In twelve other cases there was a strong family history of phthisis, —for the most part in the grandparents,—and in seventeen others a more indefinite history on the side of one parent,—a total of forty-nine cases in which some family history was obtained. Among one hundred children found on post-mortem examination to be free from tubercular disease, some family history of phthisis was obtained in thirty-nine, in thirteen it was slight, in nineteen strong,—mostly in the grandparents or in more than one brother or sister of a parent,—and in only seven was a parent said to be consumptive, and five of these were still living. This last number, by contrast with the twenty in the former list, is certainly suggestive.

The family history of the seven children who died from tuberculosis under seven months is of especial interest; in four no history of tubercle was obtained, in one the mother had died of phthisis three months before, in a second the mother died from phthisis on almost the same day as the child, and in a third she was suffering from advanced phthisis. There seems no need to advance any theories as to direct transmission from the maternal blood to explain these latter three cases. It is interesting to note that they all died from local pulmonary tuberculosis and not from a general outbreak of the disease, whereas of the other four, with no such immediate family history in either parent, only one had local pulmonary mischief. It seems much the more reasonable to suppose that the children, necessarily inheriting a strong tubercular predisposition, acquired infection—as they had every chance of doing—from the mother through the respiratory system, especially as in each case it was the mother, the parent with whom the child would be so much more in contact, and not the father, who was tubercular.

It is often stated that rickets and tubercle are, if not antagonistic, at least not commonly associated. I have analyzed my cases to see whether this seemed to hold good. Taking fifty-two autopsies on tubercular and fifty-two on non-tubercular children, all between the ages of three months and three years, I find,—

	Tubercular.	Non-tubercular.
Rickets, absent	23	25
" slight	21	14
" moderate	4	7
" severe	4	6

These figures, so far as they go, seem to indicate that there is no special relationship either positive or negative between rickets and tubercle; as Rilliet and Barthez say, there is nothing to prevent a rachitic child becoming tubercular. Possibly the idea of their incompatibility has arisen from the thinness in tubercular children of the layer of cartilage in a state of preparation for ossification, so that the distinct ridge which exists in health at the junction of the ribs and their cartilages is not to be felt, or as Jenner tersely puts it, "In rickets a row of nodules; in health, ditto; in tuberculosis, *nil*" (Lecture on Tuberculosis, *Med. Times and Gazette*, ii. 61).

In eleven cases there was a very clear history of measles and in four of whooping cough having been the starting-point of the tubercular mischief, but doubtless in many more these diseases led to caseation of the thoracic glands, and so to subsequent general infection.

Any attempt at a classification of cases of tubercular disease in children is rendered very difficult by the extreme tendency of the lesions towards generalization; it is exceptional when death has actually resulted from the tubercular mischief to find it limited to one organ, in fact, the fatal issue usually results from the supervention of an acute miliary tuberculosis rather than from the local disease; certainly the reverse of what occurs in adult life. Nothing shows better the essential unity of all the multiform varieties of tuberculosis than the study of the many varied combinations of appearances to be seen in the bodies of fatal cases in children; whilst the symptoms may have been predominantly cerebral, pulmonary, or abdominal, the autopsy in nearly every case shows that the special incidence of symptoms is merely accidental, and that the disease is really universal and multiform, whilst in any or in every organ of the body may be seen every stage of the disease from the miliary granulation barely visible to the naked eye up to large areas of advanced softening. Sometimes a solitary caseous gland has been the starting-point of an acute universal miliary tuberculosis; at other times very extensive and evidently long-standing local mischief, particularly in the lungs or intestines, has also ended in the same way, and all possible intermediate conditions between these two extremes are met with.

Another interesting point, difficult to explain, is the fact that an evidently acute miliary tuberculosis will sometimes be almost limited to one portion of the body, and that in other cases one particular part—for no obvious reason—altogether escapes. For example, tubercular meningitis, although the symptoms are often exclusively cerebral, is of course usually a part of a general tuberculosis, yet in several of my cases no miliary tubercles were seen except in the pia mater, although there was always a caseous focus. Can it be that the local incidence of what is naturally a general infection is determined by a local injury causing hyperæmia and diminished power of resistance in the part? just as a local inflammation in the lung favors the development of tubercular disease in it. Nothing is more common than for parents to attribute the illness to a blow or fall on the head, and seeing how frequently children sustain such accidents we are

doubtless right in not, as a rule, attaching importance to them; still, under favorable conditions, the injury—though slight—may be the exciting cause, just as undoubtedly a very slight strain or bruise of a joint, insufficient in health to lead to any harm whatever, may be followed by tubercular synovitis, or under different circumstances by acute gouty arthritis. In one of my cases, a boy aged three years, tubercular meningitis caused death about six weeks after a severe blow on the head from a stone, and at the autopsy miliary tubercles were found only in the cranial cavity, though there was an old caseous focus in the right lung; I can suggest no explanation of the localization save the determining influence of the injury.

Contrariwise in a few cases, whilst the thoracic and abdominal organs have shown well-marked miliary tuberculosis, the pia mater has been altogether free, at least to the naked eye.

This question as to the distribution of tubercular disease in different parts of the body is a very interesting one; we are learning something of the proclivity of the individual to tubercle, we have yet much to learn as to the special proclivity or immunity of particular organs or tissues; why, for instance, in cases of general tuberculosis—starting from the same source, softening caseous glands—the mischief should in one involve mainly the pia mater, in another the lungs, in a third the peritoneum, and in a fourth all three; the problem repeats itself in an infinite variety of forms.

In the face of these difficulties in making a classification it has been necessary to reckon some of the cases twice over, for instance, those of advanced tubercular bone-disease in which death has eventually resulted from lung mischief, or again, several cases of well-marked pulmonary tuberculosis in which nevertheless the actual cause of death has been an acute miliary outbreak; in fact, it is well-nigh impossible to say what degree of local lung-disease in such a case justifies one in classing it under the heading of pulmonary as well as under that of acute general tuberculosis. We arrive, then, at the following classification of the hundred cases:

Tubercular meningitis	11[1]
Tubercular meningitis and general tuberculosis	26[2]
General tuberculosis without meningitis	5
Pulmonary tuberculosis	42
Abdominal tuberculosis	9
Renal tuberculosis	1
Tubercular joint-disease	7[3]
Caseous glands only	9

The ordinary cases of acute general tuberculosis in which clinically cerebral symptoms predominated numbered twenty-six, and in five at least of these there was also advanced chronic lung-disease besides miliary tubercles

[1] One of these included also under pulmonary tuberculosis.
[2] Five " " " " " "
[3] Three " " " " " "

in the lungs; in eleven other cases there was acute tubercular meningitis, but very few or no miliary tubercles in other organs, although chronic pulmonary tuberculosis existed in one. On the other hand, there were five cases presenting acute miliary tuberculosis of the thoracic and abdominal organs, with either very few or no tubercles visible to the naked eye in the pia mater, and certainly no inflammatory process. Forty-two cases are included under the heading of pulmonary tuberculosis, six of them, however, having been already counted among the meningitis cases; but it is noteworthy, as illustrating the remarkable generalization of tubercle in children, at any rate towards the fatal termination, that in thirty-eight of the forty-two cases tubercles were present and often very abundant in extra-thoracic organs, whilst of the four remaining cases three were very early ones, death having resulted from other causes and the tubercular mischief being only found quite unexpectedly post-mortem. There were nine cases of abdominal tuberculosis, four exclusively and five mainly so, and one of renal tuberculosis only. There were seven cases of tubercular bone or joint disease, all but one having tubercular mischief in the internal organs or in the glands; two were cases of hip-disease, one of spinal caries, one of disease of the ilium, one of the os calcis, and one of the metacarpus and phalanges. These figures no doubt give a very inadequate idea of the real mortality in children from tubercular joint mischief, as probably most of those cases of disease of the hip, knee, and spine which end fatally are too chronic to be kept in a hospital, and drift into infirmaries or homes for incurables. There were nine examples of mischief limited to the internal lymphatic glands, death having occurred in all from other causes.

In regard to the very great tendency of tubercle in children to become generalized, it is a question not only of great theoretical but also of the highest practical importance to find out the infective centre from which the tubercle bacilli are disseminated. After carefully investigating this point in every case, there remain only four instances of generalized disease in which no old tubercular focus was discovered (and in one of these a doubtful centre existed in the middle ear), a very small residue when we consider how easy it is to overlook a small caseous centre in bone or gland. Although so experienced and careful a pathologist as Dr. Bastian says that in his experience it is not uncommon to find acute tuberculosis developing in young children in the absence of any discoverable focus of old tubercular disease (*Trans. of Clin. Soc.*, vol. xxiv. p. 33), yet I cannot but think that in such cases some small ulcer in the intestine, tubercular focus in bone or middle ear, or caseous nodule in a gland (for I have often found the internal glands completely caseous without being appreciably enlarged) has been unavoidably overlooked. In some advanced cases in which caseation had occurred in several parts of the body it was impossible to say which had been the original centre; of these there were at least ten. Bone mischief seemed to form the definite starting-point in two cases, and middle-ear disease, with caries of the petrous, in three others. Two of the latter had

facial paralysis, and Dr. Goodhart states that children with otorrhœa and facial palsy are prone to die of tuberculosis. In two instances the cervical glands were the focus, whilst in one the disease had possibly started in the uterus and travelled along the Fallopian tubes. In nine children the intestines or mesenteric glands formed the apparent starting-point, and in one the disease was limited to the kidneys. In eight lung-disease was probably primary (in addition to three cases of ordinary chronic phthisis in older children, aged eight, eleven, and twelve years, respectively), and in seven others either the lesions in the lungs or in the bronchial glands, it was impossible to say which. In no less than forty-one instances did the bronchial and tracheal glands seem to be the primary seat of lesion. The nine cases in which the disease was limited to the internal glands are omitted.

I can find only one example of general tuberculosis started possibly by operation: a girl, aged eleven months, was operated upon on October 24 for strumous dactylitis; next day the temperature, which had previously been normal, began to rise, and the child died on November 1; miliary tubercles in great number were found in all the organs. The coincidence was probably accidental, though hastened perhaps by the disturbance caused by the operation, for the tracheal glands were caseous, and it seems doubtful whether miliary tuberculosis could have developed to such an extent within a week. At any rate, seeing the large number of tubercular bones and joints operated upon every year in the hospital, the absence of cases of resultant general infection is noteworthy.

The figures given above suggest two important reflections: first, the enormous preponderance of cases starting in the thorax over those beginning in the abdomen, and, secondly, the extremely important part played by the lymphatic glands in the tubercular diseases of children. During the last few years great stress has been laid on the possibility, some probably would even say the frequency, of tubercular infection of the intestines or mesenteric glands by tubercular meat or by milk from tubercular cows. This danger must be greatest in young children, partly because of their greater susceptibility to tubercle and partly because their food consists so largely of milk, among hospital out-patients usually unboiled. Further, the frequency of gastro-intestinal catarrh induced by exposure and improper feeding among children of this class would much facilitate the chances of infection. Doubtless such infection from milk or other forms of food does occur, just in the same way as intestinal ulceration secondary to ordinary phthisis is probably due to infection by swallowed sputum, but the figures given above seem to show that in average hospital experience such cases are distinctly few as compared with other modes of entry of the infection. To begin with the nine children in whom caseous glands only were found, in six the bronchial glands alone were affected, in two the mesenteric only, and in one both sets. In the remaining ninety-one cases tubercular lesions were found in the intestines or mesenteric glands, commonly in both, in no less than sixty-four, and six others were not fully examined; in nearly all, how-

ever, the intestinal tubercle was quite recent,—either small or recent ulcers or simply deposits in the submucous tissue,—merely a part, in fact, of the general miliary tuberculosis, and even in the few cases in which the ulcers were large and of old standing, lesions still more advanced were often found in other parts. In only eight did it seem almost certain, and in seven others possible, that the primary focus of infection was in the intestines or mesenteric glands.

Questions as to the possibility and frequency of tubercular infection through the intestines cannot, however, be dismissed in this summary fashion simply by an appeal to pathological appearances; it has been shown by the observations of Ballinger, by injecting dilute solutions of phthisical sputum and of cultures of bacilli into the peritoneum or intestine, that the peritoneum remained sound in two-thirds of the cases, but that the disease attacked the lymphatic glands, spleen, and lungs, showing that lung tuberculosis need not always depend upon inhalation, but may arise from virus which has been swallowed or injected, although the readiness with which the intestines or mesenteric glands become affected secondarily shows that they are sufficiently favorable to the growth of tubercle, and therefore it hardly seems possible under ordinary circumstances in man that tubercle bacilli taken by the bowel should habitually start disease in the thorax rather than at the point of ingress.

Upon the whole question as to how, especially in children, the tubercle bacillus enters the body, we still need further information. I fully agree with the view so clearly set forth by Dr. Ashby in his article on "Scrofulosis," in Keating's "Encyclopædia of the Diseases of Children," that bacilli presumably enter with the breath or with the food, and find their way into the blood-current, but that they seem to be able to start a caseating tubercular process in those parts only which are in an inflammatory or unhealthy condition, and especially, therefore, in the glands,—*e.g.*, in the bronchial glands, if these have been kept in an unhealthy state by frequent bronchial or pulmonary catarrhs; and it may well be that the bacilli have entered with the food into the blood-current rather than by direct inhalation through the lungs, and tend to settle in the bronchial rather than in the mesenteric glands, because the former are more prone than the latter to be in an inflamed or hyperæmic condition. Experimental evidence on the question is apparently divided. Klebs found in three out of four cases of tuberculosis from feeding either the mesenteric glands or the liver affected without the intestines, whilst Wilson Fow ("Diseases of the Lungs," p. 557) states that most of the experiments on the production of tuberculosis by feeding with tubercular material have shown that intestinal affection is the first effect. But experiments on animals to settle this question can hardly be satisfactory, because they involve the introduction of bacilli into presumably healthy organisms, in which, therefore, if disease result at all, it will most likely be at the point of entry, whereas in children with scrofulous tendencies the bacilli find groups of glands already predisposed to

receive the infection, and such glands are the most likely to become caseous even though at a distance from the seat of inoculation.

In regard to the important *rôle* of the lymphatic glands in the tuberculosis of children three points may be noted: (1) that the mesenteric or thoracic glands may became caseous without any visible lesions in the intestines or lungs respectively; (2) that caseous glands form the most usual infective focus for acute general tuberculosis; (3) that the glands, particularly those in the thorax, act also as local centres of infection, the disease often spreading by direct continuity from them to the lungs.

As to the first point, the occurrence of caseation in glands without any tubercular lesion in the parts from which they derive their lymphatics, this has been frequently noted in children by all pathologists. It is well known that lymphatic glands enlarge and become caseous secondarily to various forms of skin irritation on the face or other parts which are in no sense tubercular, and the same seems to apply to the internal glands. Thus, in the mesenteric glands I met with eight instances of caseation, in some very advanced, without any visible intestinal lesion, and in several other instances the glandular lesions were of a severity altogether disproportionate to and in advance of those in the bowel. In the thorax I found thirteen examples of caseous glands without any visible pulmonary lesion, and in a very large number of other cases, as will be shown immediately, there is every reason to believe that the mischief started in the glands and extended thence into the lungs. Rilliet and Barthez, out of two hundred and ninety-one children with tubercle in the thorax, found the bronchial glands affected without the lungs in thirty-six, and out of one hundred and forty-four cases of tubercular mesenteric glands, forty-four without any intestinal lesion.

Secondly, in regard to caseous glands forming the usual centre for the dissemination of tubercular infection, I find that, out of forty-six cases of general miliary tuberculosis, in twenty-eight certainly and in seven others probably caseous glands formed the infective centre.

Thirdly, as to direct local infection from the glands by continuity, there is good evidence to show that certainly in children under five this is by far the commonest way in which tubercular disease is set up in the lungs. The case is clearly put in Ashby and Wright's "Diseases of Children," 2d edition, p. 229: "In many cases of acute or chronic tuberculosis it is clear that the disease in the glands is older than the tubercle in the lungs, and has spread from the former to the latter. In such cases the glands have become enlarged secondarily to some bronchitis or pneumonia, have undergone caseation, and the lungs have been infected in consequence of caseating bronchial or pulmonary glands, the tubercular disease spreading into the lungs from the root." It is true that in advanced cases, in which the lungs are almost entirely disorganized and the glands completely caseous, it may be impossible to say where the mischief commenced; the only way to trace it is by noting the conditions present in earlier cases. No doubt tubercles do caseate much more rapidly in some organs than in others, especially per-

haps in the glands, and therefore a tubercular lesion in the mesenteric or thoracic glands may look far more advanced than one in the intestine or lung; hence it is that it is even more important to take into consideration the apparent lines of extension of the lesion than its stage.

We begin, then, with the cases, thirteen in number, in which the glands alone were involved, the lungs being perfectly free; next we find instances in which the process had extended into the small glands lying embedded in the lung close to its root. These glands soften sooner or later, and then ulcerate through the bronchial tubes, leaving small cavities behind much resembling ordinary phthisical vomicæ in an unusual position, but differing from them, according to Rilliet and Barthez, by the absence of intersecting bands and by the smoothness of the lining membrane; these are the lesions described by Dr. Charles West under the title of bronchial phthisis. The tuberculization extends also along the bronchial septa, so that after a time the appearances presented are small cavities at the root of the lung or of one lobe, with caseous masses in various stages of degeneration around, and outside these, radiating out fan-like towards the periphery of the lobe, tubercular miliary nodules, becoming more and more sparsely scattered as the exterior is approached. It is surely fair to assume that, in many more advanced cases in which the lung is completely disintegrated, but in which cavities are found at the root, with large masses of caseous glands adherent, the process has commenced in a similar way. As in so many other pathological conditions, it is the study of the intermediate and transitional forms which explains alike the origin and the final outcome of the mischief.

The following are typical examples taken from the post-mortem records:

"(1) An infant, aged seven months; in the lower part of the right upper lobe is a cavity about an inch in diameter filled with semi-liquid caseous matter; the lung-tissue in front of this cavity is almost completely occupied by large soft caseous masses, whilst the upper portion of the lobe and the posterior border only contain a few miliary tubercles. Adherent to the right lung, and just outside the wall of the cavity described, is a much enlarged gland full of soft caseous matter, and two other similar ones farther away from the lung. The cavity was doubtless formed by the softening of another such gland embedded in the lung-substance.

"(2) An infant, aged ten months, who died of tubercular meningitis; the left bronchial glands are considerably enlarged and almost entirely converted into softening caseous masses, some are adherent to the left lung, and from them cheesy nodules appear to be extending by continuity into the lung-substance. Both lungs are also uniformly riddled with miliary tubercles.

"(3) An infant, aged six months; at the root of the right lower lobe are some completely caseous glands adherent to the lung, and radiating from them into the lung-tissue are large caseous masses, becoming smaller towards the periphery.

"(4) An infant, aged seven months; the right bronchial glands are adherent to the lung, and the lower lobe contains many large caseous patches,

especially near the root, where there is a cavity about three-fourths of an inch in diameter, with very irregular ulcerating walls. No cavities or caseous masses elsewhere in either lung.

"(5) An infant, aged eleven months; the right lung for a half-circle, with a radius of about an inch around the root, is converted into a solid caseous mass, beginning to soften in places; this mass consists partly of glands and partly of altered lung-tissue; the peripheral part of the lung is thickly studded with grayish and yellow tubercles, sparsest near the pleural surface. Bronchial glands enormously enlarged, caseous, and adherent to the root of the lung.

"(6) A boy, aged three months; tracheal and bronchial glands much enlarged and caseous, the latter continuous with caseous masses in the substance of the right lung, which is riddled throughout with such nodules, but the process is most advanced round the root, where the caseous masses are beginning to soften.

"(7) A boy, aged two years, who died of general tuberculosis; round the root of the right lower lobe is an irregular solid caseous mass in which a small cavity has formed, continuous with adherent caseous glands round the bronchi; only small tubercles elsewhere in the lungs.

"(8) An infant, aged seven months; whole of right lung studded with tubercular nodules from the size of a pin's head to that of a large filbert; the upper lobe is least affected. The nodules increase in size from the periphery inward, and are most marked near the root of the lung. Here the bronchial glands are greatly enlarged, infiltrated with tubercular material, and in one case completely softened.

"(9) A girl, aged seven years, who died of tubercular peritonitis; at the root of the right upper lobe is a cavity one-third of an inch in diameter, full of softened caseous matter and continuous with a large gland full of similar softened material; around this cavity the lung is solid and infiltrated with whitish tubercular nodules; farther out these appear as more and more scattered miliary tubercles, until at the periphery of the lobe hardly any are visible, and elsewhere in the lungs there are none at all. This case is especially interesting on account of the age of the child."

Examples might be multiplied, but those quoted are sufficient to show how frequently pulmonary tuberculosis in children, and especially in infants, starts from the bronchial glands, and how their softening leads to the formation of cavities, which, though intrapulmonary, are really glandular in origin; and also the inference seems justified that many more cases of disease, too advanced to allow of any definite starting-point being traced, must have arisen in a similar way, especially when the mischief is most advanced, even to excavation, in such an otherwise unusual position as the root of the lung.

It has, I think, been too common to regard all tubercular disease of lymphatic glands as usually secondary. Thus, Dr. Arthur Voelckar, in showing three specimens of tuberculosis of the lung arising from tubercu-

losis of the bronchial glands (*Transactions of Pathological Society*, 1891), argued that, as a rule, the caseation of these glands was secondary to pulmonary tuberculosis; with this view, at any rate as regards young children, I am, from the facts above mentioned, unable to agree. I see no reason for thinking that tuberculization may not begin primarily in the glands, and there is enough pathological evidence to show that it frequently does extend by direct continuity from them to the lungs. I have already referred to the fact that the external lymphatic glands, particularly in the neck, often become caseous in scrofulous children, subsequent to some purely non-specific irritation,—an eczema, impetigo, catarrh of the fauces, carious tooth, etc., the specific bacillus perhaps entering the body from an entirely different source, and merely lodging in lymphatic glands which it finds prepared for its reception by reason of slow unhealthy inflammation. Similarly a simple pulmonary or intestinal catarrh may start a chronic enlargement of bronchial or mesenteric glands which subsequently become the seat of tuberculization, the bacilli reaching them either directly by the lymphatics from the lung or intestine respectively; or, possibly, indirectly by the blood-stream, having entered the body at some distant part; just as an injury in a scrofulous child may start an unhealthy joint inflammation, and in a joint so prepared any bacilli which have got into the blood-stream, no matter how, may lodge. Schuller has observed that mechanical injury to a joint in the Rodentia determined this as the seat of tubercular infection when the material was introduced elsewhere into the system, or even when guinea-pigs thus injured were confined, without inoculation, with other infected animals; and if, in cases of tubercular joint-disease, the tubercle bacillus has often entered the body without starting any local mischief at its point of entry, equally it would seem must this be possible for tubercular disease of the glands.

(To be concluded in the August number.)

ANGLO-AMERICAN VIENNA MEDICAL ASSOCIATION.

BY A. O. J. KELLEY, M.D.

ALTHOUGH it may not be absolutely true in all cases that a work well begun is half accomplished, yet it is a fact that, to the English-speaking student going abroad to pursue his medical studies, a good beginning in his work is of incalculable service. Many there are, going abroad, who for one or several of many reasons—lack of experience in travelling, lack of knowledge of the German language, and of the best teachers in various places, etc.—lose much valuable time by depending upon their own exertions to obtain places in the best courses and to properly arrange their work.

Placing full reliance upon what a friend, who may have been there several years before, may have to say, they go to a place in anticipation of taking a course with a certain teacher or teachers. But in all places opportunities and best teachers are more or less always changing. For several years or more a man may be quite a favorite in a certain branch of medicine, but after a time, for some reason or another, or in the natural course of events, another is gradually forging to the head ; finally he leads and comes into favor. Again, there are men who have an international reputation, both as authorities and teachers, and yet who, as teachers, are profoundly theoretical, and have comparatively few cases for the use of their pupils. On the other hand, younger men, probably not so well known to the profession, but equally good as teachers, have an abundance of clinical material for their students. Amid such a diversity of advantages offered by different teachers, it is no wonder that a stranger in a university town is frequently, metaphorically speaking, lost. He commences a course, and not until too late does he ascertain that another by a different man would have been much more beneficial to him and more in keeping with the work he desired. Now, any information of any nature whatsoever that will aid such a man—especially if his stay must be necessarily short—will be to him of the utmost service. It is the object of the Anglo-American Vienna Medical Association to supply this information. In all the Continental cities there is probably no society of English-speaking students that so effectually accomplishes its purposes as does this same society. The time and manner of its foundation, and the reasons therefor, can best be understood by referring to the minutes of the society, from which the following quotations are taken:

"On the 13th of September, 1889, at No. 12 Landesgerichts Strasse, a meeting of British and American physicians studying in Vienna was held. A large proportion of those in the city were present. Dr. Burgess was called to the chair. A lengthened conversation took place, in the course of which suggestions were made as to the possibility of starting an Anglo-American club as a social centre for English-speaking medical men in Vienna. It was agreed almost unanimously that the only kind of an association that could succeed—especially in view of the fact that, as a rule, the longest period that English-speaking physicians remained in the city was a year, and that many (including almost all from Britain) stay at the longest six months (a large proportion remaining only three or four months), and also because men as a rule worked very hard, and had little time even to enjoy the pleasures of Vienna, and did not need any such club—was one which simply aimed at supplying needed information as to matriculation, medical courses, lodgings, etc., such as was chiefly required by men on their arrival. It was then resolved that such an association should be started, the membership to be confined to British and American physicians and medical students, and the management to be vested in a committee of five members, with the power when vacancies occurred to fill them up, and

who should elect their own chairman. It was agreed that members of the committee should, as far as possible, represent different branches of medical study. The entrance fee was fixed at one florin. A committee was then appointed, consisting of Drs. Abel, Berens, Muncaster, Cooper, and Thompson, to take the needful steps to carry out the resolutions of the meeting, making application required by Austrian law to the 'Statthalter' of Lower Austria for permission for such an association. Dr. Abel said that the Rev. Francis Gordon had kindly offered the use of his room, in which they were, as an office for the Association, and that he had agreed to act as their Hon. Secretary and Treasurer."

At a later meeting, after consideration of a draft copy of regulations, the following were agreed to:

"I. That the name of the association be the Anglo-American Vienna Medical Association.

"II. That the object of the association be to supply all needed information to British and American physicians and medical students coming to Vienna.

"III. That any British or American physician or medical student, on payment of an entrance fee of one gulden (one florin) may become a member of the association, when resident in Vienna being an active member, and on leaving becoming an honorary member.

"IV. That the office-bearers of the association consist of a committee of five members, who shall elect their own chairman, and who, on the occurrence of vacancies in their number, shall fill them up as soon as possible.

"V. That the duty of the committee be to carry out the purpose of the association, supplying information as to matriculation, medical courses, lodgings, etc., and calling meetings, when necessary, of members of the association.

"VI. That the chairman of the committee shall preside at meetings of the association.

"VII. That a vote of twenty members shall be necessary to alter the Constitution or dissolve the association."

Later the committee waited upon the rector of the university and obtained his approval of the society and his promise to speak favorably of it when "the question of its being permitted was brought before him by the Statthalter."

Subsequently, the necessary legal proceedings having been gone through, and a slight change, at the suggestion of the authorities, having been made in the Constitution, the association received official sanction. "The only important changes in the rules were the insertion of a clause requiring that an annual meeting of members should be held, at which the committee should be appointed, or their appointment confirmed, and regulations as to voting at meetings of committee and association."

At a still later date the committee called upon the British ambassa-

dor, Sir Augustus Paget, and the United States minister plenipotentiary, Colonel Frederick D. Grant, and obtained their consent to act as patrons of the association.

Thus organized, the society, as will be attested by many members and others to whom it was of service, immediately began to fill a long-felt want. Besides aiding quite a number of new-comers, the committee, by answering a large number of letters of inquiry from gentlemen contemplating coming to Vienna, incurred and received the gratitude of many an English-speaking medical man. From time to time meetings of the committee were held; occasionally, meetings of the association.

During November, 1891, "after prolonged conversation, it was suggested that useful additional features might be added to the work which the committee carried on, in the line of affording adequate opportunities for men meeting together, during their stay in Vienna, for their mutual interest." Later, "after reports as to the work of the association, the following resolutions were adopted as By-Laws to the Constitution, for the purpose of increasing the usefulness of the association:

"I. That the Standing Committee of the association call a meeting of members and of the American and British physicians in Vienna every winter early in the session for the purpose of appointing a second committee, to be called the Arrangements Committee.

"II. That the Arrangements Committee consist of as many members as the meeting think desirable.

"III. That the duty of the committee be to arrange, as each winter may be deemed best, for meetings of English-speaking physicians, to promote their special interests while in Vienna.

"IV. That the Americans on this committee form a sub-committee, to be called the American Committee of the Association, whose special work will be to care for the special interests of American physicians in Vienna, and to attend to the due celebration of American festivals.

"These resolutions were unanimously adopted."

Such is an outline of the foundation of the association as at present constituted; of its usefulness and good work accomplished its members, both "active" and "honorary," will bear testimony. There is no practical question bearing on a medical man's work or comfort that it does not endeavor to answer. In many cases before a man comes to Vienna he obtains much useful preparatory advice from the association. On his arrival, especially if he knows little or nothing of the language, and (as is frequently the case) has little Continental experience, it is of the greatest service to him. It helps him to find quickly a place of abode suited to his means, as a register of lodgings and persons that can be recommended is kept at the office. He is at once put in contact with brother physicians of his own country (perhaps of his own school at home), who cheerfully place at his disposal their experience of medical study in Vienna. If, as not infrequently happens, he must carefully economize, the association tells him

how to do so. Thus men are often enabled to remain very much longer in the city, where living is expensive, than they could have done without such aid.

Perhaps in this connection it might be interesting to again quote from the minutes:

"It was agreed that the correct statement as to the cost of board and lodging for English-speaking doctors in Vienna, and the cost of courses, were as follows: Board and lodging, from thirty dollars (with economy) to forty dollars a month. (These sums were settled after a careful comparison of the actual outlay for board and lodging of the members of the committee and of several of their friends.) Average cost of courses, lasting five weeks as a rule (one hour daily, five to six hours weekly), eight dollars. Specially arranged courses—*e.g.*, gynæcological operative courses—may cost as much as twenty dollars. It was generally agreed that men staying here six months or longer spent, as a rule, thirty-five to fifty dollars a month on an average on courses, taking full advantage of their opportunities and filling up their time."

To preserve the continuity of the association the office-bearers are a committee only, the Standing Committee, who themselves fill vacancies in their own number, whereas the work for each winter is planned and carried out by an Arrangements Committee elected by the association. This latter committee does what it deems best in the way of meetings for scientific discussions, for the obtaining and importing of information regarding other medical schools in Europe, for the celebration of festivals and other social purposes, etc.

As might be expected, during one winter one sort of gathering is popular, during another, another. But the men of one season are not hampered by any precedents as to what ought or ought not to be done. During the past winter meetings have been held every second Friday. Besides the transaction of routine business, at each meeting there has been either the reading of a paper by some member who has had some experience with the particular subject of which he elects to speak, or a discussion of the relative merits and advantages of other university towns or places for medical study in Europe. This latter discussion is conducted by men who have been to the places of which they speak, and who thus cheerfully place at the disposal of others the experience they gained in person.

The honorary members of the association are at present scattered pretty much over the entire English-speaking world. They are to be found in every State and in almost every city of the Union, in England, Scotland, Ireland, Canada, New Zealand, Australia, even in India and China. At the office of the association Rev. Francis Gordon is in attendance daily. Strangers are always welcome, and to be of service to any of them is to the reverend gentleman a source of great gratification. The office is at No. 12 Landesgerichts Strasse.

PLICA POLONICA; SOME CONSIDERATIONS ON ITS ETIOLOGY AND PATHOLOGY.

BY A. H. OHMANN-DUMESNIL, M.D.,

Professor of Dermatology and Syphilology in the St. Louis College of Physicians and Surgeons.

WHILST plica polonica is far from being a rare condition, it is not frequently observed in this country. Some observers have had the opportunity of seeing a number of cases, whereas others have never seen any. The condition is one not always easy to recognize, unless the main characteristics connected with the condition are borne in mind. Even then, if we adhere to the published descriptions as given by authors on dermatology, the history of a case is very apt to be misleading and prove a bar rather than an aid in arriving at a proper diagnosis. If we are to believe the descriptions given, and if there be a close adherence to the condition presented, it is not so difficult to recognize the condition known as plica polonica. The hair of the scalp is so closely matted that it has the appearance of being felted; and, as a matter of fact, it is felted. In the majority of cases we find this felted condition accompanied by other signs which point directly to the ordinary cause of the disease. We find a disagreeable odor suggestive of fermentative changes. Unmistakable traces of foreign matter are manifest, and it is far from uncommon to find pediculi. All these mark a condition of filth as well as want of proper care of the hair. The most ordinary attention, such as combing, has been entirely neglected, being, in part, one of the causes of the condition. In such cases the subjects are plunged in poverty, and are the victims of the grossest ignorance and superstition. Poverty seems to have a peculiar power to engender filth. It brings on carelessness to proper personal care and cleanliness, and it is possibly for this reason that we find that women are the ones who suffer from plica polonica. They plait their hair, and let the matter go at that. Household duties and gossip take up all their time, robbing them of the time which should be devoted to a proper care of the hair.

I have had occasion to observe such cases, but the only rational treatment which could be suggested has been flatly refused, except in rare instances. An inquiry into the personal experience of physicians who have had the opportunity of observing such cases, has confirmed my own observation in this respect. There seems to exist a superstition among the Poles of the lower classes that, if the scalp is shaved in a case of plica polonica, death will most certainly supervene. This is a deep-rooted belief which no amount of persuasion or argument can overcome. The patient will simply not submit to it; and, in case of compliance, the friends and relatives will use their persuasive powers to such good effect that the only rational method

of treatment cannot be carried out. Under such circumstances, treatment of any other sort is futile; and it is this very circumstance of persistent refusal which probably accounts for the comparative rarity of specimens of this peculiar matting of the hair.

The question which I am more particularly interested in bringing forward is that which pertains to the etiology of this condition. Is it a fact that it is a filth-disease? To my mind it is not. There must be some other factors, in some cases at least, and an examination of one which I desire to describe will certainly show this in a conclusive manner. Were filth the only cause, we should certainly expect to see the trouble manifested in men to a greater extent than it is; for, it is a notorious fact, that the males of the class in which it is seen wear comparatively long hair and present all the conditions necessary for the possession of plica. Yet, while their hair may be more or less matted, we find that the men, as a general rule, are singularly free of the peculiar felting observed in the women. They do not present those fermentative changes and inflammatory conditions which we find in the women, facts which are strong indications that filth and squalor cannot be the sole etiological factors in the production of plica.

However, to leave generalities and come to particulars, the recital of a case with an account of the examination of the specimen may prove more to the point in an investigation of the etiology of the condition, at least, so far as the example given is concerned. The case occurred in the practice of Dr. S. V. Wagner, of Bremond, Texas, to whom I am indebted for the specimen and the following notes:

Case.—Miss M. S., aged 16 years and 4 months, was the subject. The evening of April 14, 1892, was an exceptionally warm one. On that occasion the young lady walked, barefooted, a distance of about thirty yards and back immediately after a light shower of rain. On the same day she menstruated, this being the second occasion in her life upon which this event had occurred. Her first menstruation had taken place three months previously. The flow ceased at once, and the following day found her with a temperature of 103.5°; respiration, hurried; and excessive pains in all the joints, but more especially in the knee. Vision was greatly disturbed and accompanied by intense headache. There was free perspiration on the chest, to which locality it seemed to be limited. It had a peculiar mousy odor, a circumstance which the reporter has had occasion to observe in the stage of incipiency of all cases of plica polonica, as well as the peculiar localization of the sweating. His experience embraces a total of fifteen cases.

After two days the hair began to kink, and following this was a disappearance of the headache, the temperature becoming gradually lowered. During all this time the bowels and kidneys acted normally, neither albumen nor sugar being present in the urine. Anorexia was present during the first few days, but it was not excessive. On the seventh day the eyes became inflamed. The cornea of the right eye sloughed, resulting in a total

loss of vision in that organ. The pains in the joints continued all the time and were quite severe, necessitating the free use of anodynes for their relief.

The mass of matted hair (Figs. 1 and 2) was rapidly formed, it requiring some ten days for the felting to be established. Its removal was refused, on account of a superstition current with some that the mass (*zopf*) must mature before it can be safely removed. The maturing process, it is contended, requires six months.

The treatment of this case consisted in the administration of antipyretics, colchicum in combination with iodide of potassium, and embrocations to the joints.

The plica was finally removed, and at last reports (August 6, 1892) the following was the state of the patient: Vision in right eye destroyed; lids of both eyes slightly granular; menstruation not yet restored; general health good. The patient is well developed, weighing one hundred and two pounds. Habits are cleanly, and always have been.

Such is the clinical record of the case from which the specimen which I examined was obtained. Before considering the etiology of plica polonica, I desire to give a macroscopical and microscopical description of the plica.

MACROSCOPICAL DESCRIPTION.

The specimen which was removed embraced the entire head of hair and is roundish in form, with a diameter of some ten inches. It is about one inch in thickness. The outer or external part (Fig. 1) is tawny in color and has the appearance of an unkempt mass. Locks of hair seem to exist independently of each other, and it is only by separating these that any matting of the hair can be made out. The under portion (Fig. 2), or that which was next the scalp, is several shades darker than the outer portion. Here we find the felting of the hair quite marked. The interlacing is so complete that the whole mass has the appearance of a unit, as it were. Throughout this under surface may be seen seborrhœic scales distributed in rather an abundant manner. The impression imparted by this is that the shedding of seborrhœic scales was profuse, and the scales themselves are rather large, being about one-eighth of an inch in diameter and rather thick.

The hairs themselves are fine and long. They look normal in appearance, and do not seem to present any abnormal characteristics, with one possible exception. If one be passed between the finger and thumb it seems to impart a beady sensation,—*i.e.*, it gives an impression of there being a number of small, fusiform swellings along the shaft.

The whole specimen is clean in appearance and no trace of filth or vermin can be detected. There is no disagreeable or sour smell connected with it, so that the conclusion which is naturally arrived at is that filth could in no wise be connected with it.

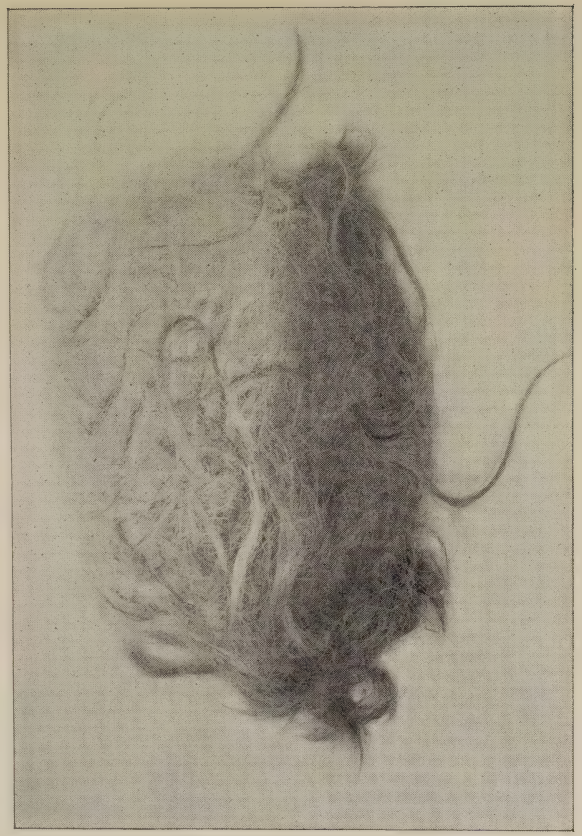


FIG. 1.—Upper or outer surface of mass of hair.

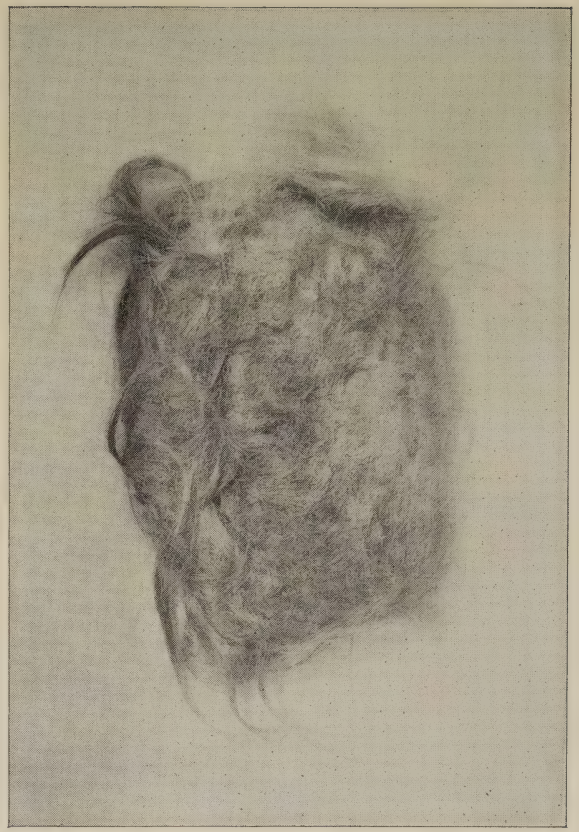
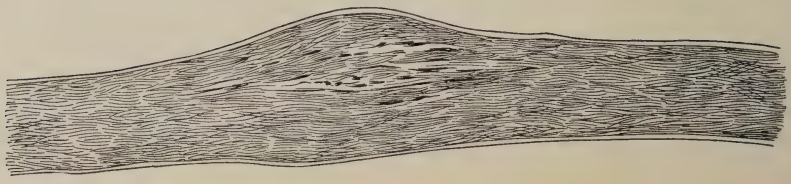


FIG. 2.—Lower or inner surface of mass of hair.

Fig. 3.



Shows the swelling of the hair-shaft preliminary to the bursting of the fibres, as seen in Figs. 4 and 5.

Fig. 4.

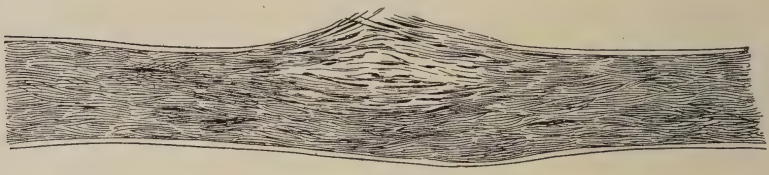


Fig. 5.

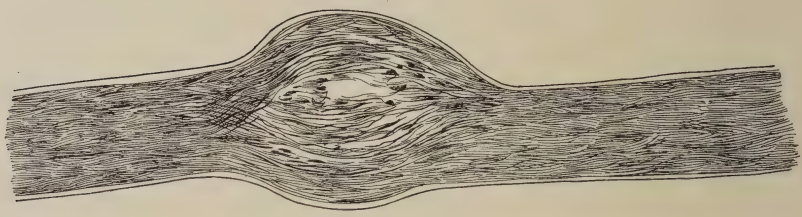


Fig. 6.

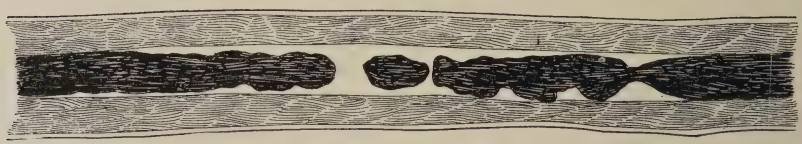
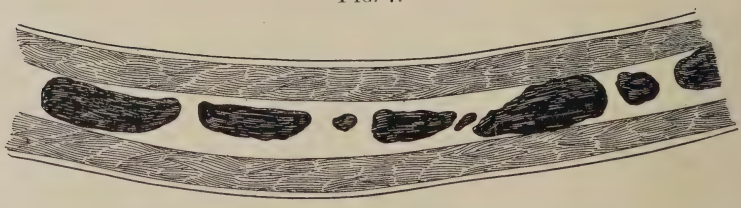


Fig. 7.



Figs. 6 and 7 represent the microscopic appearance of the changes in the medulla of the hair in plica polonica.

MICROSCOPICAL EXAMINATION.

Upon examining the hairs, it is found that a very small proportion is perfectly normal in every respect. The calibre is uniform, the cortex is well defined, and the medulla is in every way regular. The other hairs, however, are quite different, and may be divided into two general types. In the first type we have a condition which in appearances closely resembles trichorrexis nodosa. In an examination of a few specimens, the following appearances were found: The shaft of the hair is not regular in outline, and at one point there is a slight bulging out (Fig. 3). This node is caused by a separation of the fibres of the shaft, which at this point seem to be coarser than the rest, on account of this separation. A more or less open space is caused by this and has a fusiform shape in the direction of the long axis of the hair. A more pronounced condition, and one which shows a more marked change, is that where the separation of the fibres has burst the cortex (Fig. 4). Here we find that the broken fibres extend beyond the line of the shaft, interlacing more or less with each other, thus more closely resembling the condition of trichorrexis. In addition to this we have the vacant space more short than in the previous specimen, and here the fibres also seem to cross each other around and about the apparently vacant space. A feature to be noted in connection with this is that the fibres are quite separated for some little distance from the space which has been created in the shaft of the hair. Moreover, the shaft itself is not of a uniform diameter, but varies slightly throughout its length. In a third specimen an intermediate condition is to be noted. Here the bulging is seen to be almost equally prominent on both sides of the shaft (Fig. 5). Whilst the contour of the shaft is not regular by any means, the cortex has not suffered at all, probably because the process had not proceeded far enough. We note that in this specimen the empty portion is almost circular in contour. About it the fibres, as in the other specimens, are widely separated, but they seem to cross each other at each extremity of the vacuole. They are seemingly coarse, and give the impression that in a short time, had the process continued, a typical example of trichorrexis would have been produced. In the other type of changes in the hair we are confronted with an entirely different condition. In one specimen (Fig. 6) we see a marked change in the medulla. This structure is very irregular in form, and not only this, but there are small spaces in which it is entirely absent. The shaft itself is regular in form and the cortex is in no way changed. This specimen is apparently in the early stage of this particular process. In the next example we find an accentuation of the one we have just described. Here the shaft is slightly irregular in outline, although the cortex and fibrous structure seem to retain a normal appearance. The medulla, however, is markedly changed (Fig. 7). We find that it is all broken up into small, irregular masses, and that, in addition to a deficiency in continuity, there is also one in quantity. The small masses are narrower than the normal

calibre, which the medulla should fill, tapering irregularly at each extremity. There is, in addition, a greater or less deficiency at intervals in the large masses, seemingly indications of where a complete deficiency would take place in a short time. Some of the specimens examined were apparently entirely deficient in medulla, but the appearance was not sufficiently positive to warrant a conclusion in this respect.

REFLECTIONS.

It is scarcely necessary to refer to the literature on plica polonica, as it is of an exceedingly meagre character. It is well known that all authors have referred to the condition as one due to filth, no doubt because they have generally found it present in individuals of filthy habits, the hair being full of extraneous matters and pediculi, and the whole further complicated with the exudative products of inflammation. This is, however, far from being the rule. The case which has been detailed is not a rarity. Similar ones have been frequently observed, but do not seem to have been published. The reason for this lack of popularization does not seem to be apparent, yet it is a fact to which I desire to call attention, in the hope that more contributions may appear on the subject. So far as the case given above is concerned, it certainly opens up a broad field in regard to its etiology; and it is one deserving of more than passing attention, because it may be possible that even in such cases in which we find filth a prominent factor a more deep-seated cause may exist than would be assigned upon a mere casual examination, or upon a hasty conclusion not based upon pathological premises.

Upon examining the specimens, there is indubitable evidence of marked atrophy of the hair manifesting itself in more ways than one. The specimens described were found to be types which existed in over ninety-five per cent. of the specimens taken at random. Almost every hair examined showed some change of one character or another, and in those specimens which were apparently normal, it may be that it so happened that they were unaltered portions situated between parts that were atrophied. However, even granting that they were portions of unaltered hairs, their paucity would certainly go to show how universal the process was. The specimens examined were taken from that portion which was closely felted, and also from the upper part, where the matting of the hair was not so marked. There seemed to be no particular differences existing in the two, so far as any morphological changes were concerned. This circumstance would argue that the atrophy was a universal process in the hairs, and the various changes observed in the different specimens examined would argue still further that it was progressive in character, and would, in all probability, eventually attack all the hairs.

Having determined that the essential condition is an atrophy, we are next led to the inquiry as to what constituted the cause of this condition. In my opinion, it was neurotic in character, and this opinion is based upon

several reasons. In the case detailed we find the subject was a young female, who received a nervous shock of such a character as to interfere with her uterine functions. In the next place, she was furthermore subjected to such general disturbances as would readily lead to impaired nervous functions, more especially in a female. In addition to this we find a condition present which is often dependent upon disturbed nerve-action,—seborrhœa. When we reflect upon the fact that seborrhœa is largely dependent upon sympathetic nerve disturbance, and that atrophy of the hair owns a similar cause, it is certainly not straining a point to see a common cause for both conditions. Moreover, we find that plica occurs most often in women who are inclined to nervousness, and that atrophic troubles of the hair are also, in a large measure, due to an analogous cause. Taken altogether, the assumption of a neurotic origin for some cases of plica does not seem to be far-fetched.

Trichorrexis nodosa has been observed in individuals who were markedly neurotic, and the idea has been advanced that it was due to nervous disturbance. It is a known fact that the condition is a common one in women, affecting the pubic hair. This also would seem to point to a nervous cause. Now, in the specimens described, some were found which closely resembled trichorrexis, and this would seem to add an additional force to the neurotic origin. We know, furthermore, that certain atrophies of the hair, such as alopecia areata, are in many instances due to nerve disturbance, thus furnishing another link in the chain of evidence. Of course, all cases of the diseases mentioned due to micro-organisms are excluded as having no bearing upon the subject whatever.

I do not intend to pursue the subject any farther for the present, but desire to invite the attention of all interested in it to a consideration of the etiology of plica, as it is one full of interest and worthy of attention. Further microscopical studies will doubtless prove of the highest value, and will furthermore tend to establish the etiology of this rather uncommon affection upon a more solid basis. Micro-organisms can certainly be found to exist in any specimen examined, but cultivations and experimental inoculations will easily prove that they are not of a pathogenetic character in those cases which respond to the other tests answering to an atrophy due to nerve disturbance. Lack of opportunity has not enabled me to obtain specimens of the hair of the patient from whom the plica was obtained. I intend to examine some at a future opportunity to see if they have not reassumed a normal condition, as demonstrated by the microscope. Macroscopically they are perfect, and the young lady revels in an abundant head of silky blonde hair.

ADDENDUM.

After the above was written and had been read before the Mississippi Valley Medical Association, October 13, 1892, at Cincinnati, Ohio, I received the *Journal des Maladies Cutanées et Syphilitiques, for September*, 1892, which contained the abstract of an article on plica polonica, or rather

acute trichoma, by S. Jarochevski, which originally appeared in the *Gazeta Meditzina* of December 28, 1891. In this paper the author upholds the position we have advanced, that the cause of the disease is not filth in every case; and in support of this claim he describes the case of a girl of seventeen, living in good circumstances, who had the habit of washing her full head of brown hair quite frequently in winter-time by means of melted snow. She always combed her hair previously and dried it in a towel. On a day following her shampoo she noticed that she could no longer comb it, her left plait being one solid tangled mass, dull in appearance and lighter in color. All applications were futile, so far as relieving the condition was concerned.

A microscopical examination of the hairs showed that the cuticle was separated from the cortex and presented a spinous appearance. The cortex itself showed an irregular distribution of the pigment and granules, being in lumps in some portions and completely absent in others, giving a striated appearance. The medulla also presented fragmentary black striæ or a number of fragments more or less joined along the whole shaft of the hair.

It will be noted that in this case the condition of trichorrexis which I have described above was not observed.

In his conclusions in regard to the etiology of the trouble, the author quoted agrees with the view I have advanced,—viz., that it is trophoneurotic in character, producing nutritive changes in the hair. In his patient there was some menstrual irregularity, hysteroid symptoms, and areas of anæsthesia. He states that, in his opinion, all debilitating causes, such as acute or chronic diseases, may act as causative factors in acute plica. He furthermore adds that the trouble is far from being rare, although his case was the only one observed where the patient lived.

He is very emphatic in his denial of the truth of the assertion of the Vienna school that plica is a disease due to filth, attributing the acceptation of this explanation to the implicit reliance placed upon *obiter dicta*, which could be easily overthrown by a little investigation.

I have made this addendum, as much because it affords me pleasure to add the testimony of one who has pursued the same line of investigation as myself, as to acknowledge the priority of Jarochevski's work, although mine was prosecuted independently and presented some slight differences. So far as the pathological conditions presented and the etiological factors observed are concerned, our agreement is perfect. It is my sincere hope that others may be led to pursue the subject further, and it would be quite an addition to it to have investigations made of the hairs in old cases of plica, in order to note what the ultimate changes are which occur in this interesting condition. It is more than probable that we will have to depend upon European dermatologists for this, as cases of chronic plica are rather of unusual occurrence in this country; and, even when encountered, exist in individuals so imbued with superstitious ideas that specimens cannot be obtained.

THE DIAGNOSIS OF DIPHTHERIA.[1]

BY H. BOURGES, M.D.,

Paris, France.

THE appearances or symptoms on which the diagnosis of diphtheria may be based are of varying importance. The most valuable one is without doubt the detection of a false membrane,—*i.e.*, a fibrinous exudation of a white or gray color, fairly adherent to the underlying tissues, which on its removal causes a bleeding surface of variable size. This membrane usually is quickly reproduced, and is insoluble in water. The seat of this exudation must also be taken into account.

Soreness of the pharynx is the first indication of diphtheria, and the presence of a pseudo-membranous patch on the tonsils will then admit of but little uncertainty as to the true nature of the disease, especially if it extend over the pillars of the fauces and the uvula. The swelling of the glands corresponding to the invaded area, the paleness and general prostration of the patient, and the appearance of albuminuria, will also furnish important indications. Paralysis occurring during convalescence alone, by its peculiar aspect and evolution, will sometimes admit of a retrospective diagnosis when every other sign of diphtheria may have been uncertain, as the characteristic symptoms are not always apparent. In young children especially the disease will often be unperceived if neglecting Trousseau's advice we fail to explore the throat of every child that is ailing and whose condition is undefined. It is even prudent to follow this practice at the outset of any complaint, and also during its progress, for diphtheria may make an invidious appearance as a secondary infection. On the other hand, each diagnostic element may be wanting. We will merely mention those cases of sore throat unaccompanied by false membranes which are observed in the course of certain epidemics. They alternate with complaints of a pseudo-membranous nature, and are acquired by the contagion of unmistakable diphtheria, or transient inflammations of the pharynx, with a characteristic exudation. But these "diphtherias without diphtheria" are too exceptional to detain us long. It is more frequent to see the false membrane appear in a discrete form and disappear in a day, whatever the intensity of the croupous infection may be, without influencing in any way the progress of the disease at other times, and notably so in the benign forms of diphtheria, in which the swelling of the lymphatic glands is absent, and there is but little disturbance of the general health, and no albuminuria supervenes. An herpetic eruption on the lips and nostrils may appear and still further embarrass the physician, for if it be true that this symptom generally ac-

[1] Abstract of a monograph on diphtheria, by Dr. Bourges, in the Charcot-Debove collection, Paris, 1892, by our special Paris correspondent.

companies herpetic quinsy, it has frequently been known to occur together with true diphtheria.

The diagnosis of acute diphtheritic myocarditis is invested with great difficulty. If a child in full convalescence suddenly succumbs to syncope, the immediate cause of death will be difficult to determine or to distinguish from cardiac paralysis if extreme feebleness of the pulse, associated with cardiac intermittence, have not previously been noticed. In the adult the symptoms evolve less rapidly; there will be first intense precordial pain and anxiety, then cardiac excitement, soon followed by cardiac weakness, an irregular, feeble pulse, and dyspnœa, syncope, and collapse. Unhappily, these symptoms may accompany pleuro-pulmonic or pericardiac complications, which must be eliminated by careful examination before deciding on the presence of acute myocarditis.

Diphtheritic paralysis is generally easy to recognize, especially when the previous signs of diphtheria have been noticed; nevertheless, in bulbar paralysis, which begins suddenly by violent dyspnœa ending in rapid death after one or two attacks of syncope, the symptoms of acute myocarditis are so faithfully produced that only a post-mortem examination will decide the question, unless, indeed, there be concomitant paralysis of the soft palate or the extremities. In those exceptional cases of paralysis of the inferior extremities, without previous extension to other organs, it may be distinguished from peripheral neuritis, particularly from alcoholic paraplegia, by the absence of pain or muscular atrophy. Diphtheritic paralysis, again, will simulate general paralysis, the ordinary bulbar affection, disturbance of the meninges, disseminated sclerosis, and locomoter ataxia, but so roughly that it will be sufficient to elicit the evolution and history of the complaint to avoid any such confusion.

The erythemata appearing in the course of diphtheria are sometimes so ephemeral that they may easily escape detection. In other cases they are sufficiently marked to resemble the exanthema of an eruptive fever. Non-desquamative scarlatiniform erythema may be distinguished from the eruption of scarlatina by the absence of general characteristic symptoms of the tongue and throat, and lastly of desquamation. As for scarlatiniform erythema with peeling, the distinction is more difficult, the principal differential signs being the simultaneous development and lengthy coexistence of desquamation and eruption.

We have already seen how difficult these cases are, and now let us show how little we can depend on physical signs to recognize the invasion of broncho-pneumonia in the course of diphtheria. High fever, marked dyspnœa, intense and continuous, with dilatation of the nares, and yet but little falling in of the lower ribs ("tirage"), are symptoms more important than the signs furnished by auscultation and percussion.

There are two categories of affections that may be confounded with diphtheria. The first comprises a number of ailments which either by their aspect or their physical signs resemble certain manifestations of diph-

theria. We will pass them rapidly in review. The second reproduce as faithfully as possible the various symptoms of diphtheria, even the false membrane with all its physical and histological characters. This last series comprises many facts of observation still requiring close inquiry, but which are beginning to be classed under the name of pseudo-diphtheria. They will be discussed in a special part at the end of this article.

The throat and mouth are the most frequent seats of diphtheria, and the mucous membrane of this region is subject to many affections producing a whitish exudation on its surface, affections whose nature and character are calculated to excite serious apprehension. It will be sufficient to mention erysipelas of the throat and the faucial pustules of small-pox, but these localizations are rare, and under a cursory examination one will distinguish between the aspect of epithelium stripped from a part, or dilated as a pustule, and a true false membrane. It will also be remembered that after tonsillotomy the cut surface becomes invested with a gray adherent film, which lasts one or two days. The knowledge of this fact will prevent error. Thrush rarely resembles diphtheria; still it may extend to the throat, and even limit itself there in a manner to excite temporary hesitation. The closer inspection of this curd-like product should reveal its character. If, however, any doubt still exist, a small portion may be removed, and when it has been treated by potash, the microscope will show the mycelium and spores of the oïdium albicans.

Hydroa sometimes appears on the mucous membrane of the mouth. It is characterized by a superficial ulceration covered by a thin false membrane of whitish aspect. But other characteristic bullæ will generally be found near the hands and feet. Besides, neither the general symptoms nor the glandular enlargement are at all comparable to what obtains in diphtheria, and bleeding from the denuded area does not follow removal.

Ulcero-membranous stomatitis (ulcerative stomatitis) has been known to extent to the throat, but then the lesion is generally unilateral, while excoriations with a yellow or buff-colored investment may be seen on the inner surface of the cheeks, the gums, and the lips. These patches are very adherent to the mucous membrane which takes part in their formation; there is besides great fetor of the breath and copious salivation. Pultaceous tonsillitis is early recognized by its creamy exudation, so easily removed and strictly limited to the diseased organ.

Much more difficult is the diagnosis of bucco-pharyngeal herpes. The objective signs are not sufficient to make a diagnosis. We may trust to the milky whiteness, the marked adherence, and many-circled contour of the exudation formed by the confluent herpetic vesicles. There is no re-formation on removal. But none of these signs are absolute. They may all be found in diphtheria. General herpes is ushered in by high fever, rigors, and intense headache. The glandular enlargement is slight and of tardy occurrence. Albuminuria is generally absent, and there is usually recurrent eruption on the lips, the nostrils, and the chin. In spite

of the number of these differential signs, it may often be impossible to distinguish the affection from a mild form of diphtheria. The more serious hypothesis must then be adopted, and the case treated as one of diphtheria.

When diphtheria passes from the throat to the larynx, the nature of the laryngeal affection will follow from inspection of the lesion in the pharynx. But it is not so in primitive membranous croup, or when the early false membrane has disappeared without detection. Diphtheria, then, is only disclosed by the mechanical obstacle which opposes the respiratory function. Now, in the child the affections that excite analogous symptoms are numerous, owing to the small capacity of the impaired glottis. There is only one pathognomonic sign of diphtheria localized in the larynx: it is the expectoration of a false membrane, and this sign is often absent.

In stridulous laryngitis the first attack of suffocation comes on suddenly during the night, with an intensity disproportionate to the slight catarrhal symptoms that may have appeared in the course of the preceding day. Between the attacks the voice is hoarse, the cough sonorous, and respiration calm; while in membranous croup the voice and cough are rapidly and definitely strident, dyspnœa becomes more intense as the suffocative spasms are repeated.

Retro-pharyngeal abscess and œdema of the glottis may contract the laryngeal canal to a degree that may give rise to symptoms of asphyxia, similar to those of membranous croup. It is as well, then, to explore the pharynx and upper part of the larynx with the finger as soon as the nature of the affection is suspected. Diphtheria which develops on other mucous membranes, the nasal fossæ, the conjunctiva, and the genitals, is easy of diagnosis. When it appears on the skin it is rarely primitive; other habitual spots, throat or larynx, have been invaded before. If, however, it first appear on the skin, it must not be forgotten that a badly-dressed blister or a neglected patch of impetigo may develop a grayish investment that may lead to confusion. The most elementary cleanliness will now restore the wound to its normal aspect.

Pseudo or False Diphtherias.—The affections we have enumerated resemble diphtheria more or less closely, but they almost invariably admit of distinction. It is not so, however, with the next class which we will proceed to examine. These reproduce the exact clinical aspect of diphtheria, and differ from it really in progress and prognosis, and in bacteriological examination of the false membrane, which last will remove all doubt. In examining a patient suffering from scarlatina, who during the first two or three days of his illness has developed the characteristic erythematous throat, accompanied, perhaps, by a pultaceous discharge, we will sometimes find that the aspect of the throat has become modified on the first or second day following the eruption, while lenticular points appear on the orifices of the tonsillar crypts. These thick points soon become confluent and form a somewhat cream-like covering, still retaining a curdled aspect and only slightly adherent. Generally on the following day there is no further room

to doubt that we are dealing with a false membrane, which can be removed in large pieces; not only that, but they spread to the pillars of the fauces, and the soft palate, where they may invest the uvula, and even extend to the pharynx. Always white at first, and sometimes of a lustrous hue, they afterwards assume a grayish or yellow color, studded at times with black spots which give rise to punctiform bleeding. Besides, they are closely adherent to the mucous membrane, and are therefore difficult to remove. After being detached they recur in a few hours. Their removal often leaves a bleeding surface, which, on being wiped, is found to be eroded and deeply jagged.[1] The temperature rises or remains high. Dysphagia and snuffling are marked. This threatening condition of the throat is further accompanied by swelling of the submaxillary glands. In exceptional cases either diphtheritic coryza, laryngitis, or paralysis of the soft palate will supervene, according to the degree of the extension of the false membranes, the gravity of the general symptoms, and the share of infection which seems to be due to the *anginal* condition. These affections, we think, admit of distinction into, say, three forms. In *the mild form* the false membranes are comparatively limited, and have little tendency to spread; the submaxillary enlargement is slight, there is no complication attributable to the *anginal* inflammation; the general condition is satisfactory, and the febrile symptoms only last a few days, unless the scarlatina of itself be intense. The false membranes may spread at once over the tonsils and uvula, but they have no marked tendency to recur, and rapidly disappear. The *anginal* state is free of consequences, local or general. *The grave form* is characterized not only by the rapid extension of the false membranes, by their percentage of quantity, persistence and intensity of the submaxillary glandular swelling, but also by the long duration of the *anginal state*, which in the cases we have observed lasted from nine to twenty days, and gave rise to protracted fever and other general symptoms, with further complications which were almost constant in their occurrence (broncho-pneumonia, rheumatism, nephritis-adenitis, otitis, impetigo, etc.). This form has not a fatal issue of itself, but is of prognostic gravity in prolonging the convalescence; and it certainly contributes to hasten a fatal termination in malignant scarlet fever, which it frequently complicates.

If in the preceding forms those symptoms, independent of the pseudo-

---

[1] In the remaining portion of this abstract the author uses the French word "*angine*," which we propose to translate as *angina*, and "*angineuse*" by *anginal*. We see no reason why a good useful word introduced by Cullen, and frequently employed by the French, should not be preserved as a generic term to designate morbid conditions of the throat. Quinsy is an awkward corruption of cynanche (κυνάγχη), and neither has an adjective. If it is objected that the term *angina* and its derivatives should be reserved for "*angina pectoris*," we can point to French authors who use the term in connection with both conditions, and whose writings are lucid and precise; we also see no reason why *angina pectoris* should not be known as *angor pectoris*.

H. B.

diphtheritic affection, assume the most important part in the morbid scene, it is no longer so in the *septic form*. Here an atypical eruption, feebly developed, and evanescent, is often the only sign of scarlatina. The other symptoms depend entirely on the complicating anginal state, which seems, indeed, to constitute in itself the whole disease. Hence the name of "scarlatina anginosa" often given to this variety. It will be sufficient to recall the most complete description of the severest forms of diphtheritic croup to find the faithful image of scarlatina anginosa. We have established the existence of these different forms by numerous bacteriological examinations by proceeding by the method of linear cultivations in gelatinous serum or "*gelose*." We have made an examination of nineteen cases of septic pseudo-membranous angina of incipient scarlatina. Only one of these cases was of diphtheritic origin; in the remaining eighteen cases, no colony of Lœffler's bacillus could be cultivated, but the presence of the streptococcus pyogenes was constant in the false membranes.

It is now known that the pseudo-membranous angina of the early days of scarlatina is rarely of a diphtheritic nature. This statement is based on the study of forty-five cases, in which a bacteriological examination was made with great precision,—that is to say, with serum cultures. In forty-four cases the bacillus of diphtheria was not found. The cases may be divided thus: four were examined by Lœffler, one by Epine, and four by Manguan, one by M. Moril, seven by Tangel, one by Marfan, and eighteen by ourselves. These same men, in speaking of secondary diphtheritic infection, say that the late pseudo-membranous angina of scarlatina is found to be almost always of pure diphtheritic origin. But are there sufficient clinical signs to admit of distinguishing pseudo-diphtheria of scarlatina from true diphtheria? We shall proceed to enumerate the differential signs which are advanced, and discuss their value:

1. At the advent of scarlatina the false membranes assume a lustrous hue, white and not gray as in diphtheria; they are friable, disintegrate when any attempt is made to detach them, and cannot therefore be removed in large strips. This is true of scarlatinal pseudo-membranous angina on the first or second day, it ceases to be so afterwards. Besides, does not diphtheria also give us false membranes that are quite white in color?

2. The soft palate and the uvula are only invaded in diphtheria. Numerous bacteriological researches have proved the contrary.

3. Scarlatina anginosa leads to necrosis of the mucous membranes invaded, and ulceration often accompanies the pseudo-membranous formation. This ulceration is often difficult to see, but ulceration may complicate, exceptionally it is true, real primitive diphtheria.

4. Glandular enlargement of the submaxillary region may terminate by suppuration in scarlatina anginosa. But is it not so also in diphtheria?

5. Albuminuria is rarer in scarlatina than in diphtheritic croup. That is certain, and still albumen may often be detected in the urine at the very outset of scarlatina.

6. The general health is much less disturbed than in diphtheria, paleness less marked, the strength much less depressed. This is certainly one of the best diagnostic signs, and yet there may be cases of mild diphtheria that evolve without much disturbance of the general health. On the other hand, the septic form of scarlatina anginosa makes the general symptoms as bad as possible.

It is easy to see from this discussion of the subject that a diagnosis is very difficult in such cases, if not impossible in some, when we have two affections that offer so many analogies.

We know that there is a form of puerperal diphtheria in which true fibrinous false membranes may be observed on the vulva, the vagina, and the mucous membranes of the uterus and tubes, which often leads to suppuration. This fibrinous exudation has many points in common with the products of diphtheria, but M. Widal has been able to show its complete independence by proving that while the false membranes of diphtheria are formed of Lœffler's bacillus, those of puerperal infection are due to the streptococcus pyogenes.

We would place in the class of primitive pseudo-diphtheroidal affections, which appear independently of any pre-existent or concomitant disturbance of health, all cases that have recently been justified by bacteriological research and which make a distinct group. M. Roux and Yersin have observed several cases of primitive pseudo-membranous angina that were not diphtheritic. M. Minitour has described a case where he isolated the pneumococcus. M. Netter has also found pneumococci in laryngeal false membranes when Lœffler's bacillus was absent. We ourselves examined two cases in 1890, neither of which furnished Lœffler's bacillus, and both gave cultures of the streptococcus pyogenes. M. Netter has also seen one case of diphtheriodal quinsy due to streptococci and staphylococci. Baginiski, in ninety-three cases, found sixty-eight due to Lœffler's bacillus, and fifteen due to streptococcus and staphylococcus. Other examples of this false diphtheria have been given by Morel, Murry, and Martin.

If the majority of these cases evolve into mild diphtheria, others again give rise to grave general symptoms, to infectious erythemata and considerable glandular enlargement and even a fatal issue.

MM. Severine and Gaston have observed a form of diphtheroidal stomatitis which may complicate measles and whooping cough. It is mild, and differs in many respects from diphtheria, especially in being strictly limited to the mouth. It is due to the staphylococcus pyogenes albus.

A CASE OF ULCER OF FOREARM RESULTING FROM AN OLD BURN.

BY B. H. POTTS, M.D.,

Ex Resident Physician in the Presbyterian Hospital, Philadelphia.

I WISH to call attention to a case of ulcer of the forearm resulting from a burn, which was treated during a space of time covering two years without benefit until skin-grafting was done according to Thiersch's method, as modified by a New York surgeon.

Patient is E. M., aged forty years, female, widow; has had nine children, all living and well. Previous to accident she enjoyed good health. Was admitted to the female surgical ward of the Presbyterian Hospital March 21, 1892. Eighteen months previous the patient's dress caught fire from a lamp and nearly half her body was burned. In about six weeks all the wounds had healed except the forearm. A year after the accident the patient went to another hospital, where she remained three months; skin-grafting was tried twice without benefit. She left the hospital and was treated in the dispensary.

During the past few weeks the patient thinks she has lost some flesh, has had night-sweats and chilly sensations. Has had but little pain. The ulcer extends from two inches above the elbow-joint to the wrist, covering the entire surface of the forearm. The granulations are elevated, irregular, and bleed but little, but throw off a profuse and very offensive discharge.

On readmission the patient was put on a course of tonics and the ulcer dressed with a solution of pepsin and hydrochloric acid to digest, if possible, the granulations in preparation for another attempt at skin-grafting. This solution had the effect of reducing the granulations considerably, but caused such exquisite pain that it had to be abandoned after its employment for three weeks, and a bichloride dressing was substituted. The ulcer was dressed in this manner for about two weeks, and then a one-per-cent. solution of cupric sulphate was used. Up to this time the arm seemed to have improved slightly, but under the sulphate solution did not do so well, and at the end of five days a solution of boric and salicylic acids was used.

About this time, May 15, 1892, patient developed erysipelas and was isolated; the rash was confined to the left hand. The disease yielded readily to treatment, and by June 6, 1892, patient was practically well and the arm in good condition. The ulcer was for ten days dressed with bismuth subnitrate. Subsequently this was changed to one of aristol and vaseline, which was continued for a week. The arm was now in better condition than at any time since the accident, and five islands of skin were taken from the arm above the ulcer. There was at this time a very offensive discharge from the granulations. Five days later twenty additional grafts were taken

from a freshly amputated leg. The dressing was not disturbed for five days, but as the patient then complained of pain the ulcer was dressed and found to be in good condition, some of the grafts showing signs of growth. At the end of three weeks about one-fifth of the surface had been covered in by new skin; patient was then anæsthetized and some fresh grafts taken from the arm. These latter grafts did not grow, and the granulations became exuberant, the whole surface seemed to lose ground, so that at the end of five weeks all the new-formed skin had broken down, and a very profuse and offensive discharge was being thrown off. September 16, 1892, I began to prepare the arm by washing thoroughly with a bichloride solution, one to one thousand, and dressed daily with iodoform gauze saturated with balsam of Peru. At the end of two weeks the surface was in better condition than it had ever been before, but there was still some discharge. A modified Tiersch's operation was performed at this time. Briefly the steps of the operation were as follows:

The evening previous to the operation the surface of the ulcer was carefully washed with soap and water, followed by a washing with a one to one-thousand bichloride solution. The surface from which the grafts were to be taken, which in this case was the left thigh, was shaved and washed in the same manner as the arm, and both surfaces were dressed with bichloride gauze. On the morning of the operation both surfaces were carefully rewashed in the same manner. A half-hour before operation the thigh was washed with a saline solution, six to one thousand, and dressed with gauze that had been sterilized by heat and saturated in the saline solution. It is important that there should be two lots of this saline solution, one boiled the night before the operation and allowed to cool, the second boiled the morning of the operation, so that by combining the two it will be possible to have always at hand a lukewarm solution. The first step of the operation proper is to thoroughly scrape with a Volkman spoon the entire granulating surface, then wrap tightly in sterilized gauze that has been saturated with the saline solution, so as to check the hemorrhage.

Then the thigh is exposed and the grafts, taken preferably from over the flat surface of Scarpa's triangle, are cut with a sharp, flat-sided razor. It is best, if possible, to have the grafts of sufficient length to extend the entire length of the ulcer. As the grafts are cut they should be placed in a lukewarm saline solution, and kept there until enough have been cut to cover in the entire surface of the ulcer.

The gauze dressing is then removed from the ulcer and the grafts applied, being carefully smoothed out with the end of a probe. The edges of the grafts should be placed in apposition and should slightly overlap the edges of the ulcer. The grafted surface should then be dressed with strips of gutta-percha tissue about one inch in width and of sufficient length to extend entirely around the surface, and should be laid on in an imbricated fashion. Over this should be placed sterilized gauze that has been saturated in the saline solution, then a layer of half a dozen thicknesses of dry

sterilized gauze, and the whole firmly bound on with a gauze bandage. The thigh should be dressed in a similar manner.

Both arm and thigh should be dressed every other day, with precisely the same precautions as to dressings and asepsis. In removing the dressings the gutta-percha tissue should be taken off strip by strip, and care should be taken not to lift it off, but it should be folded back upon itself and worked off in that manner. The surface should be washed with the saline solution at the time of dressing.

I am convinced that in the case in question the granulations were not entirely eradicated, for at the first dressing I found that there had been considerable discharge of the same character as that thrown off before the operation, which had lifted some of the grafts from the surface; these of course sloughed completely, but about one-half of the grafts held, and slowly but steadily continued to throw out new skin over the uncovered surface. At the end of six weeks over three-fourths of the surface was covered in, but shortly afterwards the new-formed skin broke down in three places, leaving ulcers about one inch in diameter, and here the granulations became exuberant, and finely powdered boracic acid was dusted over their surfaces in addition to the regular dressing. The acid, while beneficial to the granulations, seemed to have a deleterious effect upon the surrounding skin, and a dry gauze dressing was substituted. The three ulcers were subsequently grafted and covered in by new skin.

The arm improved steadily until January 2, 1893, when the only spot uncovered was just over the tip of the olecranon process of the ulna. The surfaces on the thigh healed rapidly, except in a few spots where the grafts had been too thick and the fat was exposed. These spots were rather obstinate, but finally healed perfectly. The patient left the hospital in better condition physically than she had been at any time since the accident.

I have given the case in detail to show, first, what an unsatisfactory condition the ulcer presented, and, secondly, to point out some mistakes made. I think that had the eradication of the granulation-tissue been more complete there would not have been the subsequent discharge which lifted up some of the grafts and caused them to slough. Then, as I have already pointed out, in a few places the grafts were too thick, and this fact affected the result in two ways, because the graft comprised the entire thickness of the skin, and hence would not grow so well upon a fresh surface; secondly, because the fat of the thigh was exposed, and the healing process was very much retarded in that place.

I wish also to show the superiority of this method of operation in all its details, for I think it undoubtedly saved the patient's arm, and possibly her life, as she was at two different times advised to have the member amputated.

1032 Spruce Street.

ELECTRICITY VS. *SURGERY IN GYNÆCOLOGY: A CHARGE TO THE JURY.*[1]

BY A. REEVES JACKSON, A.M., M.D.,

Professor of Gynæcology in the College of Physicians and Surgeons of Chicago, etc.

I HAVE always considered the position of a judge sitting in the trial of a cause at law one of the most difficult and responsible in human affairs. This feeling has been still more deeply impressed upon me since the time when I selected a title for this paper, and placed myself in some degree in the attitude of arbiter concerning questions which no one believes to be entirely settled. However, I am consoled by the thought that I am not likely to work injustice to either the plaintiff or defendant; for, contrary to the usual method of procedure in law courts, according to which the lawyers speak first and the judge last, here what I have ventured to call the charge of the court will be given first and the attorneys will be heard afterwards. The charge to the jury will consist simply of a presentation of the testimony.

In suits at law the usual method of procedure is as follows: the plaintiff files a declaration setting forth his grounds of complaint, whereupon the defendant is served with a notice and summoned to make answer. In the case of Electricity *vs.* Gynæcological Surgery this has been done. More than twenty years ago Drs. Ephraim Cutter and Gilman Kimball served such notice upon Washington L. Atlee, Baker Brown, and others who were then dealing surgically with uterine fibroids. They declared that by the use of electricity they had found a method of treating that disease with an encouraging degree of success without incurring the dangers which attended the enucleations, avulsions, and necrotic proceedings of the surgeons. To this the surgeons made a general denial of the alleged efficacy of the new method of treatment, likewise of its harmlessness, and of the completeness and permanency of the reported cases. Thus the issue was made up, and the parties and their successors have been in controversy ever since.

It is impossible to predict when the jury shall be able to render the verdict. Certainly, it cannot be definitely announced now. The facts upon which it must be based have by no means all been gathered. The witnesses who have from time to time appeared upon the stand on behalf of the plaintiffs—Cutter, Apostoli, Keith, Martin, Goelet, Massey, Rockwell, Smith, and others,—are still at work, and their more matured experience will come to us by and by. The surgeons, too, in numbers even greater, among them Joseph Price, Homans, Tait, Bantock, A. Martin, have not been idle. Indeed, the work done by them during the past twenty-five years,

[1] Read before the Chicago Medical Society, September 5, 1892.

both in regard to its amount, its meritorious character, and its audacity of execution, has never been equalled in an entire century.

In presenting the evidence which has been adduced on both sides of this question, I shall endeavor to be wholly fair and impartial. Furthermore, it will be my aim to avoid expressing an opinion in favor of one or other side. It will doubtless be difficult to maintain this neutral position, for, like most of my hearers, doubtless, I have opinions upon the subject, and I may find it impossible to cancel them.

Any fair-minded person who might desire to learn the truth concerning the therapeutic value and achievements of electricity, and who should consult all that has been written upon the subject during the past twenty-five years, would not find it an easy matter to form a judgment. This is because of the contradictory nature of the testimony. Thus, it has been asserted, on the one hand, that the agent is potent for marked good in the treatment of a long list of disorders widely different in their nature; and on the other hand, it has been found by others of apparently equal skill and honesty to be utterly useless in the same and similar maladies. This is natural, or, at least, it is usual.

The most candid investigator frequently finds it difficult to be wholly honest with himself. His first examination of a given subject commonly leaves him with more or less bias, which must be overcome before his mind is restored to a condition of impartiality. If he be possessed of a frank, judicial mind which permits him to accept with an equal welcome all facts, whether they be for or against any preconceived leaning, original or acquired, he must yet realize the impossibility of newly observed phenomena possessing equal weight and convincing power. Hence it is a matter of common observation that most investigators soon become partisans, not always consciously perhaps, but nevertheless rather surely. This is because of their human and fallible nature.

This sort of unintentional dishonesty when it arises from self-delusion may be excused. But there has been much evidence of a partisanship in the discussion of this subject which bears the impress of not being so honest, but rather the result of a determination to admit only such facts as might be in accord with the already formed views of the inquirer. Such a neutral attitude as this must always be an obstacle to the attainment of truth.

Another difficulty in the way of reaching a fair conclusion has arisen from the lack of technical knowledge on the part of some who have reported the results of their experiments. It is quite clear from some of these reports that the observers were unfamiliar with the most elementary knowledge concerning the agent they were discussing, and that they really did not know the difference in the action of the galvanic and faradic currents or in that of the negative and positive poles.

Electricity and gynæcological surgery have come into conflict at many points,—the various inflammations of the pelvic structures, uterine displacements, menstrual disorders, ovarian cystomata, ectopic pregnancy, uterine

fibro-myomata, etc. Thus, Dr. F. H. Martin speaks most confidently of the power of electricity in strong doses to disperse inflammatory exudations in the pelvis. He includes in the list of those which are amenable to such treatment all cases "from the simple thickening of one or both broad ligaments to complete fixation of all the organs of the pelvis, with a thick unyielding exudate matting everything together." He says that this exudation will disappear, the pain from pressure upon nerve-fibres will rapidly diminish, sympathetic disturbances will be relieved, displacements caused by contracting bands will gradually give way, and the general mobility of the pelvic organs will return. He has stated his belief that every such case may be cured by strong doses of galvanism.

Lapthorn Smith knows of nothing so satisfactory in the treatment of certain forms of amenorrhœa as three applications a week between the menstrual periods of what he terms the "current of tension" to the inside of the uterus. He has likewise found it "remarkably effective in vaginismus." But I do not intend to consider all the various conditions in which electricity has been proposed as a substitute for surgical methods. There are, however, two fields in which the parties to the controversy have been sufficiently active to entitle their claims to candid consideration,—namely, extra-uterine gestation and fibroid tumors of the uterus.

EXTRA-UTERINE PREGNANCY.

Since the time when Bachetti first used electro-puncture with the faradic current in 1853 to arrest a tubal gestation, electricity in various methods had been employed for the same purpose down to February, 1890, in sixty cases. Dr. A. Brothers[1] states that death occurred in five of these, but thinks the fatal result was fairly attributable to the agent employed in only one of them. In four others alarming symptoms occurred but passed away.

No one claims that electricity should be used in the treatment of an extra-uterine pregnancy which has existed longer than four months, and the greater number of those who advocate its employment at all limit the available period to three months. It is conceded also that the treatment is not proper after rupture of the sac has taken place. Both sides are therefore practically in accord as to the undoubted propriety of laparotomy after the period of rupture,—providing the resulting symptoms justify any sort of interference. Confining the discussion, then, to the anti-rupture period, the electricians claim that there are distinct advantages in the use of the electric current over laparotomy immediately after the detection of the misplaced pregnancy during the early months.

These alleged advantages are summarized by J. M. Baldy.[2]

1. Electricity destroys the fœtus with certainty.

2. It causes the absorption of the killed fœtus and other contents of the gestation sac.

---

[1] American Journal of Obstetrics, February, 1890.

[2] Transactions of the American Gynæcological Society, 1890.

3. The treatment is harmless.

4. It does not prevent the occurrence of future pregnancy.

Are these claims well founded?

Clearly the question of diagnosis cannot be omitted from consideration, for only upon its accuracy can the treatment be fairly based or justified. Whether the diagnosis of an early ectopic pregnancy can be made has been warmly discussed. That it has been done repeatedly and subsequently verified by operation there is no doubt. And if the laparotomist has done this, can we say that the electrician may not do as much?

But what shall we say of these claims which assert the superiority of electricity as a method of treatment?

1. It surely cannot be maintained that electricity always kills the fœtus, for a number of cases have been reported (Coe, Bovee, Wylie, Baldy, Tuttle) in which it failed, and in which subsequent operation was demanded.

2. Does the treatment by electricity cause the absorption of the killed fœtus and other contents of the gestation sac?

That it does this in a considerable number of instances we cannot doubt if we accept the testimony of honest observers and grant the accuracy of the diagnosis. On the other hand, it is equally certain that in many cases there remain hard masses in the pelvis for years, and it must be conceded that trouble may arise from their presence. The danger attendant upon this contingency may not be great, but it is nevertheless an ever-present possibility.

Some surgeons have accounted for the alleged disappearance of the one-sided pelvic tumors on the ground of a mistaken diagnosis. But if they do this they are obliged to admit the power of the electric current to disperse the conditions which may simulate ectopic pregnancy; and this many of them are unwilling to grant.

What becomes of the fœtus and placenta after the destruction of the former by electricity is not by any means settled. It has been stated that so soon as the fœtus is killed the tube endeavors to expel its contents. In a discussion upon this subject before the British Gynæcological Society,[1] Dr. Routh cited seven cases of tubo-ovarian or interstitial pregnancy in which the fœtus had not only been killed by electricity, but had also been forced into and through the uterus. But the otherwise great value of these observations is materially lessened by the doubts that must surround the diagnosis.

3. The usually harmless character of the treatment is vouched for by Thomas, Emmet, Mann, Rockwell, Mundé, Garrigues, Goelet, and others,—all of whom have had safe experience with it.

The alleged danger of rupture of the sac and consequent hemorrhage from the use of the current is perhaps only theoretical, although Jaggard[2] thinks that the usual effect of the strong faradic current is to cause rupture.

---

[1] Transactions, May, 1888, p. 56.

[2] Transactions of the American Gynæcological Society, 1890.

So far as I am aware, no instance has been reported in which such an accident has really occurred. If this charge were valid, it would seriously militate against the claim of the electricians for the safety of the treatment. It is true that suppuration of the sac has occurred after the use of the current, but not in any case, I believe, in which it was used under three months, and, in proportion as the duration of the pregnancy exceeds that time, both the safety and efficacy of the method become more doubtful.

4. As regards the future capability of the woman to become impregnated, it does not apply more to electricity than to surgery. If the result of the treatment were to empty the tube and restore the latter to a normal condition, it could, of course, resume its functions. But this would not be so material provided the uninvolved side were healthy. Besides, it shows no advantage over laparotomy upon this point, for an operation would only be done on one side.

It has been claimed by the electricians that errors of diagnosis are not of consequence, provided electricity be used as the remedy in ectopic gestation. But surely this cannot be fairly maintained. If the condition which may be mistaken for it should be a pyosalpinx, or other form of pelvic abscess, the result of temporizing treatment might be highly disastrous.

It has been shown by Dr. Joseph Price, who I am well aware holds radical views upon this question, that in many cases falling under the notice of himself and other surgeons the patients who have been under treatment by electricity are found to have adhesions at and near the part of the abdomen against which the abdominal pad has been placed. If these statements be applicable to any considerable number of cases they become of very great importance, because they imply not only failure of electricity to cure, but increased difficulty and danger in the final surgical interference when the latter becomes a necessity.

The advocates of the use of electricity in ectopic gestation have met formidable opponents, some of whom have expressed their views in very forcible and unmistakable terms. The opinions of Tait and Bantock are well known. They consider the alleged effects of electricity to be illusions, and they both, in accord with Joseph Price, believe that injury rather than good comes from the vain attempts at cure. Mr. Tait terms it "a most nonsensical proposal," and says that if the child be killed by electricity, a useless and dangerous mass will be left. At the Brighton meeting of the British Gynæcological Society in 1887, he said, "To apply the electric current to every kind of pelvic lump under the suspicion that it was an extra-uterine pregnancy would be a most haphazard, dangerous proceeding, worthy of the strongest condemnation."

Dr. A. W. Johnstone says of the electrical treatment, "The fact that it is based on the assumption that the death of the fœtus ends the matter condemns the whole process." "For I know well," he adds, "that the placenta has a separate existence, and that it must be killed before the growth of the gestation sac can be arrested."

Wylie, of New York, and Martin, of Berlin, and many others, are strongly opposed to the use of the agent. The former operated[1] on three cases in which the diagnosis of extra-uterine pregnancy had been erroneously made, and in two of them a supposed cure by electricity had been recorded. At the operations no trace was found of ectopic pregnancy. There were simply dilated tubes, and in one of these was contained two pints of fluid.

J. M. Baldy[2] relates also a number of cases in which errors of diagnosis were made and disclosed by subsequent operation. Those who advocate radical surgical methods for the treatment of ectopic pregnancy in the early months, prior to the period of rupture, claim the following advantages:

1. By laparotomy all the elements of extra-uterine pregnancy are completely removed, no portion remaining to cause subsequent possible danger.

2. Any complicating disease which may be present, and which needs surgical treatment, can be dealt with at the same time.

3. Any condition which might cause a mistaken diagnosis would probably be one demanding surgical treatment, and hence the operation would be necessary.

4. These manifest advantages, it is alleged, justify both the patient and the surgeon in assuming the greater risk which is incurred by a laparotomy. The validity of the first and second of these claims can perhaps safely be admitted. So much, however, cannot be certainly said of the third, for a number of abnormal pelvic conditions more or less closely simulating extra-uterine pregnancy may exist that do not require a radical operation.

Leaving out of consideration the preference of the patient,—for her right to a rational choice must be conceded,—the decision must turn upon the last claim,—namely, that some additional risk may be properly accepted in order to insure a complete removal of disease.

The skill and experience of the operator are elements which should be taken into account in estimating the degree of this risk.

The objection to laparotomy, that it is a mutilation, is hardly a valid one, unless the mutilation be unnecessary. If the organs removed be so greatly diseased as to be useless; or, still more, if their presence be dangerous, there is no more reason why an ovary or a tube should be permitted to remain than a necrosed bone.

The time has perhaps not arrived when any one can say, unconditionally, just what would be the better course to pursue in the presence of a detected ectopic pregnancy prior to the stage of rupture. The jury may pass upon the evidence.

ELECTRICITY *VS.* SURGERY IN THE TREATMENT OF UTERINE FIBROIDS.

The other important domain in which electricity and surgery come into competition is the treatment of uterine myo-fibromata.

---

[1] American Journal of Obstetrics, January, 1890.

[2] Transactions of the American Gynæcological Society, 1890.

I have already alluded to the fact that twenty-one years ago the treatment of this disease by electricity was begun in this country by Dr. Ephraim Cutter. He claimed that, as the results of this treatment, there occurred lessening of hemorrhage and pain, diminution of size, and, in some cases, disappearance of the growth, with all accompanying symptoms. He was assisted in his experiments by Dr. Gilman Kimball, of Lowell, Massachusetts.

The method pursued by Dr. Cutter consisted in etherization of the patient and the introduction of both electrodes through the abdominal wall into the tumor. The results of this method, as given in a paper which appears in the "Proceedings of the International Medical Congress for 1890," are as follows: The growth of the tumor was arrested in about fifty per cent. of the cases; slight improvement in six per cent.; no diminution in fourteen per cent.; complete disappearance in twenty-two per cent.; mortality, eight per cent. Slowly the example of Drs. Cutter and Kimball was followed by others, and by and by an immense impetus was given to the movement by the work of Dr. Georges Apostoli, of Paris. His results, published from time to time, were so favorable as to attract the attention of medical men among all nations. He may be justly styled the high-priest of electro-therapeutics, who, more than all others combined, has identified himself with the method, and who, by the introduction of instruments of precision, has placed the treatment upon a scientific basis. His views and his works are well known. His large and intelligent experience enables him to say that, by the use of the electric current in the treatment of uterine fibroids, the hemorrhage is lessened or wholly checked, and that other symptoms are relieved; that tumors are diminished in size, but that it must not be expected that they will disappear. He further admits that many patients have a recurrence of symptoms after the lapse of a year or a year and a half.

Apostoli has many disciples who more or less closely follow his methods, and some of these make much more extravagant claims than does their teacher.

It is admitted by conservative men that, notwithstanding the great frequency of fibroid uterine disease, there are comparatively few cases in which the general health of the patient becomes seriously impaired or her life jeopardized; and that a very small percentage calls for radical surgical treatment. It is only in the case of these latter that there can properly arise any controversy as between the two competitive methods of treatment. In these the surgical means usually employed are mainly two,—namely, removal of the uterine appendages and hysterectomy. In a limited number of cases the neoplasm may be removed either by way of the vagina or by laparotomy without hysterectomy, but, for the purposes of this argument, these need not be specially considered. But while it is admitted, theoretically, that only a few cases of fibroid disease need any treatment whatever, and that still fewer demand radical surgery, the fact is that many electricians

use their remedy for every case they find; and, on the other hand, some of the surgeons, with equal lack of discrimination, advise, and, if permitted, perform serious operations for every case that comes to them.

The electricians claim that by the use of the current the symptoms—hemorrhage, pain, pressure—are relieved; that the tumors are checked in their growth, reduced in size, and made to disappear. This covers the whole ground. Surgery cannot claim more. In fairness it should be said that all advocates of the use of electricity do not make these claims absolutely and unconditionally. The more conservative among them only allege that the symptoms—chiefly the hemorrhage, and to some extent the pain—may reasonably be expected to lessen in nearly all of the cases. Indeed, there is a very remarkable agreement among those who have used the Apostoli method that it rarely fails to ameliorate hemorrhage. Lapthorn Smith goes so far as to say that it never fails to do this if all the details of the treatment be properly carried out. His statements are frequently characterized by strength. He has said, for further example, that "certainly in the case of small fibroids the continuous current never fails to remove them." The positiveness of these allegations is not confirmed, as I have shown, by Apostoli, or by F. H. Martin and others. Martin has shown that failure does result in some cases, and gives as reasons the tortuous character of the uterine canal, and also the multiple nature of the growth, both of these conditions preventing the accurate application of the electrode to the seat of the disease. Parsons has likewise stated that diminution in the size of the growth took place in only a limited degree in most cases.

In estimating the value of some of the reports upon this subject there is a possible fallacy which ought to be eliminated. Thus, some of those who have reported success with the use of electricity for the treatment of the hemorrhage attendant upon fibroids have also used the curette, ergot, and hydrastics at or about the same time. These means are doubtless quite proper, but when they have all been used in a given case and amelioration follows, it is not accurate reasoning to say that the electric current was the curative agent, because we know that either of the others may have been.

It is not denied that fibroid tumors may be removed by the galvanopuncture, but no one can doubt the dangerous character of the process. It seems almost certain that the result under this method of treatment is due to the inflammation and disintegration which are set up by the caustic action and not at all because of the electric current, which could act as well through an unpunctured mass.

A very candid and withal conservative witness is Dr. J. Wesley Bovee, of Washington. His testimony appears in a paper published in the "Transactions of the American Medical Association," vol. xii., 1889. While he has found undoubted evidence of good results from the use of electricity in diseases of the female pelvic organs, he thinks the efficacy of the agent has been overrated. He treated a large number of patients suffering with uterine fibroids of various sizes, shapes, and localities diligently for some

months, and did not observe diminution in the size of any of them except two, and in these he subsequently thought he had erred in his diagnosis.

Van de Worker has pointed out that in some cases which cannot be determined in advance the tumors are irritated by the repeated treatments and really made worse, sometimes growing more rapidly or degenerating into fibro-cysts.

Zweifel regards the effects of electricity as purely symptomatic, but thinks that it may arrest growth and check hemorrhage.

Dr. J. H. Kellogg, of Battle Creek, has reported to the American Electro-Therapeutic Association held in September last the results obtained by him in the treatment by electrolysis in sixty cases. In fourteen of these, or twenty-three per cent., the tumor and all the symptoms disappeared. In seventeen cases, or twenty-eight per cent., the tumor was considerably diminished and the patient restored to health. In eleven cases, or eighteen per cent., the tumor was not diminished, but all the other symptoms were cured. In five the tumor was not diminished but the symptoms were better. In only nine cases was the treatment a failure. It ought to be a matter of deep regret that so few can obtain such successful results.

Arendt[1] gives his experience in eleven cases. Eight were treated for hemorrhage, and three for violent pains and other disturbances. Of the first eight cases the hemorrhages were diminished in six; one patient reached the menopause, and the eighth, who had been castrated before, was entirely cured. Of the three who had pain the treatment was successful in two; the other died of peritonitis after five séances.

During the discussion of Arendt's paper Veit stated that out of forty cases improvement had come in two-thirds, but never a complete disappearance of the tumor. He admitted that there had been an occasional increase of hemorrhage. Broese, with thirty-five cases, twenty-five of them hemorrhagic, stated that three left off treatment before positive results were observed, two were uncured; twenty were freed from hemorrhages, some for years; diminution of size was rare; one tumor the size of a fist disappeared, five others were reduced in size.

Probably the utterances of no other man have carried so much weight in regard to the utility of electricity in the treatment of uterine fibroids as those of Thomas Keith. This is accounted for by the fact that he has achieved a world-wide reputation because of his great success in the performance of hysterectomy in the treatment of these growths, and because his skill as a diagnostician, and his integrity and truthfulness, have never been questioned. His views upon this subject are so well known, and his words have been so often quoted, that I refrain from reproducing them. He unhesitatingly endorses electricity in the treatment of uterine fibroids, and earnestly pleads for a cessation of all bloody operations until Apostoli's treatment shall have had a fair trial.

---

[1] Wiener Med. Presse, No. 45, 1891.

Prochownick states that in one-half of the cases treated by him the patients were cured of hemorrhage, which was checked with or without arrest of growth or diminution in the size of the tumor. In three who had pain the latter symptom was entirely relieved.

All observers have not been so successful as those whose experiences I have given.

Martin and Machenrodt[1] report thirty-six cases of fibro-myomata treated by the Apostoli method with the following results: The growth did not disappear in a single instance, and in none could a positive diminution in the size of the tumor be demonstrated. After several months' treatment most of the patients were relieved as regarded hemorrhage, and some as regarded pain, but usually these symptoms returned after cessation of treatment. In forty per cent. of the cases the general condition of the patients became worse; three died while under treatment, one of anæmia following repeated bleedings, and two of septic peritonitis.

The same writers found on analyzing the most recent statistics of Keith and Schäffer that out of two hundred and twelve cases the symptoms were relieved in thirty-two per cent., they became worse in forty-four per cent., and 4.3 per cent. died. The tumor did not disappear in any instance. The "symptomatic cures" were only lasting when the patient was near the menopause; in younger patients the symptoms frequently recurred.

These writers also report the result of surgical treatment in thirty-nine cases. In twenty of these the myomatous uterus was removed by laparotomy, with two deaths; fourteen by the vagina, with no death; in five the tumor was enucleated, without a death; total mortality, five per cent. They have abandoned electrical treatment; doing nothing for mild cases, and operating on the others.

In a considerable number of cases the electrical treatment is not applicable. Thus, in three hundred and fifty-six cases in Martin's private hospital the tumor was cystic or malignant in fifty-three; in twenty-three the uterus was cancerous or impregnated; and in forty-three there was marked disease of the tubes or ovaries.

Dr. John Homans, of Boston, in order to test for himself the efficiency of Apostoli's treatment, commenced its use in his private practice in December, 1887. He treated in all thirty-four patients with the following results: In three of the cases the tumor was diminished in size; the general health was improved in fifteen, and made worse in two; profuse hemorrhage was diminished in nine cases, increased in six, and unchanged in nine; locomotion was made easier in sixteen cases, and more tiresome in five; pain was lessened in six cases and increased in two. The menopause occurred in four cases after the treatment was begun. One patient died of peritonitis, which he attributed to the treatment. In his experience the results were not certain, and they were not comparable to those of surgical

[1] Deutsche Med. Wochenschrift, No. 2, 1892.

methods, for, during the time that he was experimenting with electricity, he operated by abdominal section for uterine fibroids fifteen times with fourteen recoveries.

The fact that the claims of electricity have been exaggerated ought not to influence our candid judgment in estimating its value as a therapeutic agent.

Much evidence has been adduced to show that it has power to promote absorption of some forms of fibro-myomata. Perhaps this power is not very great, but if it only arrests growth and does not cause a lessening of size is this not useful? That it frequently checks hemorrhage and occasionally lessens pain are well-established facts. In many instances it has enabled women to perform their duties who would not have submitted to operation. On the other hand, the treatment is protracted, entailing loss of time and discomfort, with uncertain results, and attended by the probability of the patient becoming worse in more than one-third of the cases. And it is not free from danger.

Now, as against the admitted claims of electricity, we must consider those of surgical methods. It cannot be denied that while the degree of success in causing the diminution and disappearance of the tumor which has followed the removal of the ovaries and tubes has not been very satisfactory, it has yet been much greater than that from electricity. And in considering the duration of treatment it is as days against weeks, or weeks against months. No one has doubts in regard to the beneficial results both of removal of the appendages or of hysterectomy in the more formidable cases. And while both these operations involve more risk to life than electricity, oöphorectomy is not greatly more dangerous, and hysterectomy is only properly done when the disease is imperilling life and milder means promise nothing. It should not be an operation of choice, but of necessity.

ULCERATION OF A LARGE GALL-STONE INTO THE ALIMENTARY CANAL, PRODUCING UNUSUAL SYMPTOMS.

BY NORMAN BRIDGE, A.M., M.D.,

Professor of Clinical Medicine in Rush Medical College, Chicago.

Mrs. A., aged about sixty-five years, a short, stout woman, the mother of a large family, who had enjoyed fair health for the previous dozen years, came to Chicago to visit a sister in the summer of 1890. Soon after her arrival she was seized with a chill of short duration. This was followed by a fever with high temperature, lasting for a number of hours, and disappearing with profuse perspiration. She had at the same time discomfort in

the epigastrium. Her physician regarded the case as one of ague, and gave her large doses of quinine. The next day the same chill and fever recurred, and on nearly every succeeding day until the time of her death. The recurrences were not at the same hour each day. In a few days she became semi-comatose during the paroxysms. She vomited repeatedly, and had constipation. Finding that the quinine did not stop her fever, her physician asked me to see the case in consultation, and I visited her with him almost daily for a month. At my first visit, which was made at a period of defervescence, I found slight tenderness over the epigastrium, but was unable to demonstrate through the thick adipose tissue the presence of a tumor. The heart-sounds were normal, the lungs were clear. There was a small amount of albumen in the urine, with an occasional hyaline cast. Her nausea made it impossible for her to retain sufficient food, and she continued emaciating very slowly. There was no œdema anywhere. It was manifestly impossible for the renal complications to account for the symptoms, and I was therefore forced to regard the case as an obscure one of some sort of blood-poisoning whose origin was unknown.

Her treatment from this time forward was entirely symptomatic. Efforts were made to lessen the nausea, to correct the constipation, and to increase the watery element of the urine. In a few days she developed a distinct systolic cardiac murmur at the apex, which, however, disappeared within a week. She gradually became weaker, and in a few days, in her paroxysms of fever, she was quite unconscious, and behaved, as to the nervous agitation, very much like a patient in thermic fever. About three weeks after my first visit the constipation became much worse, and large quantities of laxative medicine were required. Salines and small doses of calomel were used. At the same time the movements of the bowels were preceded by colicky pains, more or less intense. Finally, a liberal dose of calomel was resorted to in the hope of removing some fecal matter or other object that might produce the colic. The result was the expulsion of a large calculus. This body was found to be somewhat cylindrical in shape, about two and one-half inches long by one inch in diameter. On breaking it open, it was found to be composed of a soft material, light yellow in color, crystallized into lines or striæ, radiating from the centre. Its outer surface was rough and darker in color. It appeared like a cholesterine formation, and such Dr. Walter S. Haines, professor of chemistry, declared it to be. This, then, was evidently a gall-stone which had formed presumably in the gall-bladder, and ulcerated through into the alimentary canal.

The hope awakened by this occurrence that the patient might recover from the healing of the lesion was, however, not realized. The daily paroxysms of fever, now more than ever proven to be septic, continued, with a gradual weakening of the vital powers. She was taken to her home twenty miles away, where she sank and died a week afterwards, having lived about forty days from the beginning of the sickness. Unfortunately, no post-mortem examination was made. That the gall-stone developed in the gall-

bladder I am led to infer from the fact that the patient had had previous to this sickness no known hepatic trouble, no jaundice, no tenderness in the neighborhood of the epigastrium. Some of these, it seems to me, would have occurred had the calculus developed in one of the large bile-ducts. Moreover, the shape of the stone was such as to suggest its development within the gall-bladder.

I found in a post-mortem made some years ago upon the body of a patient dead of a malignant disease developed from the pancreas a calculus completely filling the gall-bladder, which had firmly contracted upon it, and which was in form like an elongated egg, and closely resembling the one voided by this patient. In the post-mortem referred to, the wall of the gall-bladder was firmly fixed to the surface of the calculus, and its irregularities were so firmly embedded into the membrane that the latter was peeled off from it with considerable difficulty.

In the case here recorded the affection of the kidneys was probably a pre-existing condition aggravated by the acute sickness.

CLINICAL LECTURES.

THE SUPPURATIVE STAGE OF HIP-DISEASE. THE TREATMENT OF SPRAINS.

CLINICAL LECTURE DELIVERED AT THE NEW YORK POLYCLINIC.

BY V. P. GIBNEY, M.D.,

Professor of Orthopædic Surgery, New York Polyclinic; Surgeon in Chief to the Hospital for the Ruptured and Crippled.

GENTLEMEN,—This morning I was asked by my house-surgeon how I managed cases of hip-joint disease in private practice, and whether it was necessary to wash out the sinuses and dress them as often as is done in the hospital. I replied that as a rule there was not so much trouble in private practice as in hospital practice; that frequently an abscess is opened at one's office, the cavity packed and a generous dressing applied, and that after that dressing the nurse or mother is usually instructed how to wash the parts and cautioned against the too frequent use of injections. I am becoming convinced that we often err on the side of doing too much. This was very forcibly illustrated to me some time ago, when a boy with long-standing ankle-joint disease returned to the hospital after a stay of one or two months at the Convalescent Home in Saratoga. While in the hospital, he had been frequently curetted and had been most assiduously dressed, yet the discharge

had kept up. While away from us he had had a little wholesome neglect, the wound only being washed off once or twice a week; yet on his return, the sinuses were all closed, and his foot has been well ever since then, a period of two years.

The foregoing remarks are preliminary to a consideration of suppurative bone-disease in the hip. If an abscess form, and it be recognized early, it will be found most commonly in the gluteal region just above the trochanter major, the abscess seeming to come up from the digital fossa. The small tumor thus formed is very often mistaken by both surgeons and general practitioners for a dislocation of the hip. I can recall a case in which an eminent surgeon in this city made the mistake of calling such an abscess a pathological dislocation of the hip; but the tumor did not come above Nélaton's line, and the diagnosis was subsequently confirmed by an incision. The next most frequent site for abscess is in Scarpa's space; sometimes it is found under the femoral vessels, the pus burrowing down to the lower part of Scarpa's space, the tumor then having the shape of a split orange. Another common site is just to the outer side of the tensor vaginæ femoris, and an abscess here is easily reached and easily treated. When an abscess is recognized at an early stage, the splint should be kept carefully applied so as to maintain the limb in good position and protect the joint not only against accidental trauma, but also against the necessary trauma which results from reflex muscular spasm. For this purpose you may use a splint, or a weight and pulley with rest in bed.

The next point to engage your attention is the aspiration of these abscesses. In about nine out of ten cases you can easily empty the sac in this way, but in the tenth case you will find that it cannot be so easily evacuated, as the needle becomes clogged. Such an abscess contains thick pus, bits of cellular tissue, and often broken-down bone. When this is the condition, run a bistoury along the track of the aspirating needle and lay it open. This is such a simple procedure that it is hardly worth while to make a separate operation of it. After incising it, irrigate the cavity, pack it with gauze for two or three days, and then insert a drainage-tube; stretch the parts, and apply the usual dressing, continuing the use of the protective apparatus. If you succeed in emptying the sac by aspiration, take some strips of adhesive plaster, half an inch wide and three or four inches in length, and, beginning at the bottom of the sac, strap it as you would an ulcer; apply a small compress of gauze over the sac, and a snug bandage. This strapping should be continued for some distance above the abscess, the object of this being to secure agglutination of the walls of the sac. An ice-bag should then be applied over the strapping for from six to twelve hours to prevent undue inflammatory reaction. It will probably not be necessary to aspirate for two or three weeks, when the cavity will again fill up and the operation require to be repeated. Generally four or five aspirations will be sufficient to cure the abscess. From my own experience in hospitals, I should say that fifty per cent. of the cases so treated are perma-

nently cured, and I believe even better results may be obtained in private practice.

If you first see the case in the later stages, when the abscess is large enough to fill the whole gluteal region, or the inner aspect of the thigh, it is not good practice ordinarily to waste time in aspirating; but if you feel you can carry out thorough asepsis in the subsequent dressings, then I advise numerous aspirations at short intervals. The best treatment, however, is to anæsthetize the patient, make a free incision, retract the lips of the incision wall, and under constant irrigation with sterilized water at a temperature of 115° or 120° F., gouge or curette thoroughly the deepest recesses of the cavity. If there is much bleeding, pack the cavity; if not, sew up the larger part of the sac, insert a drainage-tube, and apply the usual dressings, so as to make pressure on either side. The best way is to pack the wound with gauze impregnated with iodoform, dermatol, or boracic acid; but where the cavity is large, there is some danger of a poisonous quantity of these substances being absorbed. These cases do not all do well, however.

Let me illustrate this subject by reporting two or three cases. A girl fourteen years of age, now in the hospital, was first seen on July 28, 1882. There was a history of lameness since the fall of 1881, and of limited motion, spasm, and atrophy, slight shortening, yet the case had not been treated during all this time. A diagnosis was made of right hip-disease. On admission, there was marked lameness on the right side, limitation of motion in all directions, and the limb could not be flexed beyond an angle of 90°. At that time the "expectant treatment" was in vogue in the hospital, and consisted in applying blisters and poulticing, and in rest in bed, without any attempt to correct the deformity. After the blister had relieved the pain a spica bandage was applied, and the child allowed to push a chair about the ward. On November 27, 1882, it was noted that the functions of the joint were almost normal, that there was no atrophy and but slight limitation of motion; and in June, 1883, she was discharged with little or no symptoms of hip-disease. I found her at her home in August, 1885, with scarcely a perceptible defect in her gait, no atrophy, and no pain, and she seemed to be entirely well. She was next seen in February, 1892, after a period of eight years' freedom from acute symptoms. She had had no treatment since 1883; her general condition was good; the angle of greatest extension was about 165°; there was no shortening of the limb, no atrophy of the thigh, and slight motion at the hip. She came to have the adduction corrected. There was no pathological dislocation, no evidence of abscess, and she had never had an abscess. On February 11, 1892, under nitrous oxide anæsthesia, the adduction was corrected by slight manual force. March 4, 1892, the bandages were removed, when it was found that the limb could be extended to 173°. A calliper splint was then applied. On September 24, 1892, the limb could be extended to 180°; there was one inch shortening; no motion, spasm, or pain; some infiltration about the hip. She was then discharged from the hospital, but was read-

mitted on December 15. There was a tumor in Scarpa's space, and fluctuation could be detected under the femoral vessels. She was emaciated and the limb was very tender. On December 16, under ether, an incision was made from the anterior spinous process of the ilium down for two or three inches, going between the sartorius and the tensor vaginæ femoris. This exposed two abscesses, which discharged thick, broken-down bony tissue, pus, and bits of cellular tissue. Exploration with the finger showed the ramus of the pubes to be roughened, and the head of the femur to be broken off; with large chisel and mallet, and a periosteal elevator, I removed this, and now show it to you; only a mere shell of bone remains, as you see. With a Volkmann spoon I curetted the medullary cavity until healthy bone was reached, scraped off the edges of the acetabulum and the ramus of the pubes, and packed the wound with boracic acid gauze. That night she required no anodyne, and the temperature subsided rapidly. Yesterday, on dressing the wound, we found scarcely any discharge. She will be up in a chair in a few days.

The second case I wish to describe is that of a girl having much the same history. The abscess was opened and drained, but it did not do well, and she was sent home last summer, but returned in about one month with a much more profuse discharge of offensive pus. On November 29, she was anæsthetized, and I made a free incision and quickly curetted the medullary cavity, and after irrigation dressed the wound in the usual manner. The highest temperature in the rectum was on the day following the operation, when it reached 103°; it has not reached 102° since then, and she is now thoroughly convalescent.

On the other hand, a third case having a similar history, has not done so well. He has a waxy look, albumen and hyaline casts in the urine, and his liver is enlarged. The sinuses have partially healed, with much induration and œdema about the hip. A week ago the discharge became very profuse, and under primary anæsthesia with ether I made an incision and packed the wound. Two days ago, on dressing the case, the pus which was discharged was so offensive that no one could stay in the room. I found the end of the bone covered with cartilaginous tissue, and I snipped off this diseased portion, and packed the wound thoroughly, and since then he has been able to be around. If, therefore, these sinuses and abscesses trouble you, go down to the head of the bone, scrape it out thoroughly, and do not hesitate to operate repeatedly if the case seems to demand it. If, in spite of all these measures, the discharge continues and life is in danger, the limb should be amputated at the hip. I think the third case described to you will ultimately come to this. After you have succeeded in curing these abscesses, it is very important to keep up the splint treatment for some time afterwards.

THE MODERN TREATMENT OF SPRAINS.

I desire now to speak to you of the treatment of sprains according to the very excellent method described in a little book published by Mr.

Cotterill, of London. Physicians often talk in a vague way about ruptured ligaments in sprains, but as a rule the ligaments are not ruptured. What really happens is, that the tendons and the capsule of the joint are strained. When such an accident occurs, there is ecchymosis and swelling, the fluid in the sheath of the tendon becomes increased, and we have all the usual signs of acute sprain. After you have excluded fracture and dislocation, proceed to treat the sprain properly in the following simple manner: Put the injured foot on an inclined plane, or tell the patient to lie with the foot up on the head of a sofa for some time, while some one carefully and patiently rubs the injured tendon. After a few hours of rest, straps of adhesive plaster should be applied like a Scultetus bandage, beginning below the seat of injury and continuing up two or three inches above the injured area. Over this a piece of cheese-cloth is applied for the first night, and a light bandage. As soon as the bandage is applied, let the patient put on the shoe and insist on his beginning to walk in your presence. After the first few efforts it will be comparatively easy. Never allow these patients to use crutches, and never be guilty of using plaster of Paris or a fixed dressing. If the toes show a tendency to swell, they should be strapped first. After about one week, fresh plaster should be put on. I first adopted this treatment five or six years ago, and I have treated sprains that way ever since, and have never felt that I have made a mistake in so doing. Quite recently I have treated chronic sprains by giving the patient ether, and producing a condition simulating an acute sprain, and so far with fairly good results.

Two or three weeks ago this man came to my clinic with a tenosynovitis of the tendo-Achillis. There was a distinct swelling and local pain, and on motion I obtained a distinct "rice-body" crepitation. He was treated in the manner just described for sprain, and he is now almost well.

VESICO-VAGINAL FISTULA.

CLINICAL LECTURE DELIVERED AT THE BUFFALO GENERAL HOSPITAL.

BY MATTHEW D. MANN, A.M., M.D.,

Professor of Obstetrics and Gynæcology in the Medical Department of the University of Buffalo.

GENTLEMEN,—A large, healthy German woman comes to the hospital and states that fourteen years ago she had a child born after a labor of five days, under the care of a midwife. The midwife failed to appreciate the cause of the delay, and did nothing for the patient's relief. Finally, a physician was called, who delivered her of a dead child with instruments, after a very difficult operation on his part. After that she was very ill, and had retention of urine, requiring catheterization until the third day.

Soon, however, the urine began to flow freely without any control on her part. The patient gives a vague history of being paralyzed in one leg, and being obliged to use crutches for several weeks after the confinement. Gradually, however, she recovered health and strength, but the involuntary loss of urine has continued, and she has been unable to get relief from the physician whom she has consulted.

The history leads to the diagnosis of incontinence of urine either from paralysis of the sphincter fibres around the neck of the bladder and the urethra or from a vesico-vaginal fistula. The latter condition is very much more common, but the only way to settle the question is to make an examination. On passing the finger into the vagina, I find the perineum somewhat torn, indicating a previous difficult labor, and there is great tenderness of the parts about the vulva, as would be expected from the constant dribbling of urine. On the anterior vaginal wall there is an opening as large as a silver dollar if it were stretched to a circular shape. It is rather oblong, its greater axis being lateral; it takes in a considerable part of the vesico-vaginal septum, and the edges toward the neck of the bladder are quite a good deal turned in. The upper edge, toward the cervix, projects into the vagina, so that the finger passes readily into the bladder and feels the posterior wall of the bladder against the firm mass of the cervix uteri. Anteriorly, the bladder wall lies close to the symphysis; posteriorly, it is quite corrugated.

It was not the forceps that caused the fistula. Forceps could never make such an opening with the long axis from side to side. The fistula was undoubtedly due to pressure of the child's head for so long a time on the soft tissues between it and the pubic bone; and the fact that the incontinence did not begin till the third day after labor, signifies that the slough did not fall off till then.

It is somewhat remarkable that the woman should have gone so long without being able to get help, for in these days of surgical gynæcology such operations are eagerly sought after. Vesico-vaginal fistulæ are not nearly so common as they used to be. The forceps are used freely; physicians understand the necessity of early delivery better than formerly; women are not allowed to go five days in labor, and the older cases have either died or have been cured by operation. I have seen but two *bonâ fide* cases of vesico-vaginal fistula, preceding this one, in the last ten years. The first case occurred in this city, and was due to the enormous size of the child. The opening was small. The second case was one of long standing, which was sent to me from Pennsylvania. I could do nothing for it, as the tissues were entirely wanting between the neck of the bladder and the external parts, while the ureters seemed to open right into the vagina, with scarcely a sign of bladder or urethra.

The present case is quite a difficult one, and whether we can close the fistula in one operation or not, I do not know. The sides of the vagina are considerably contracted, and it will doubtless be necessary to make some

lateral incisions in order to enable the parts to be drawn together. It will probably be necessary to close the wound with four sets of sutures passed from side to side and antero-posteriorly.

Dr. Sims was the pioneer in this work, and he operated on a great many cases, mostly slaves in the South. On one patient he had to operate seventeen or eighteen times before he accomplished a cure. His main difficulty was in exposing the parts, and it was not till he invented his speculum that he succeeded. Simon, in Germany, followed, using the Sims speculum in an entirely different position from that used by its inventor. Simon placed the patient in the lithotomy position, separating the vulva with retractors. Sims thought that his success was largely due to the use of silver wire sutures, but Simon substituted silk sutures with equally good results. He did away with Sims's retentive catheter, and allowed the patient to walk about and to pass her urine naturally from the very first. He showed, therefore, that success was due to getting the parts nicely together without too much traction, not to the position, catheterization, material used for sutures, or the after-treatment. These cases were for many years an opprobrium to surgery. Thanks to Sims and Simon, we are now able in almost all cases to close these fistulæ if we keep working at them. The method of denuding the edges of the fistulæ is quite important. The tissues must be freshened at the vaginal surface and not at the bladder wall. The thickness of the vesico-vaginal septum does not afford a sufficient surface for union. Sims, therefore, pared off the tissues, bevelling from the vagina to the bladder, so as to increase the opposed surfaces.

With reference to the sutures, I prefer to use silver wire, largely from habit, since I can twist better than I can tie deep in the vagina. But it is perfectly proper to use silk or even catgut if any one prefers. When a vesico-vaginal fistula is made for the purpose of removing a stone, it makes little difference what suture is used, for the wound not only tends to heal spontaneously, but it is difficult to keep it open. When there is a loss of tissue from sloughing, however, nature may be utterly incapable of effecting a cure.

[NOTE.—The patient was subsequently operated upon, the fistula being closed in two sittings, except for a central stitch-hole which required a third operation. She ultimately left the hospital entirely well.]

GASTROSTOMY FOR SYPHILITIC STENOSIS OF THE PHARYNX.

CLINICAL LECTURE DELIVERED AT THE BUFFALO GENERAL HOSPITAL.

BY ROSWELL PARK, M.D.,
Professor of Surgery in the University of Buffalo, etc.

GENTLEMEN,—At the first clinic of the term you saw a girl who was operated on by Dr. Phelps. There was an almost total contraction of the pharynx, which was overcome by the thermo-cautery, and, for the time being, the girl's condition was very much benefited, but the general nature of the occlusion was such as to put an almost hopeless aspect on the case. In patients of her degree of intelligence we have little to hope for from perseverance in active co-operation. Before she left the hospital I talked to her of the necessity of dilating the opening that remained in the pharynx, and urged her to go to some physician; or, if that were not possible, to carry out herself repeated efforts at dilatation with her finger. However, she did not follow this advice, and a month or two later she was brought back to the hospital, and with instruments and the finger we again dilated the opening to such a calibre that she could swallow solid food. As soon as possible, however, she left the hospital in spite of our advice, and she has once more returned for further treatment, rendered necessary by her carelessness. When she entered the hospital a few days ago, the opening in the pharynx was only as large as a lead-pencil, and served her for breathing and the taking of a limited amount of nourishment, but not enough for full nutrition. She was, therefore, fed by the rectum. Last Saturday night she was taken with acute dyspnœa, and the house-surgeon performed tracheotomy, cutting through the old scar. The insertion of the tube afforded instant relief. Now the patient's condition is about as follows: She can breathe easily; she can get enough air through the pharynx to enable her to whisper, and, by closing the trachea-tube, enough to make a sort of voice; she cannot get food enough through the pharynx to support life long;—rectal alimentation is at best a temporary expedient; in spite of all the efforts which she will let us make, the pharynx is steadily contracting, and the examinations that I have made from time to time give me no hope of being able to make a permanent opening in the pharynx. The more I do in her mouth and pharynx, the more cicatricial contraction will result, and, however much I may operate, I am faced with the prospect that my efforts will be finally ineffective, and the patient is threatened with starvation.

Within the last two days I have been talking to her about a gastrostomy, in order that she may be fed through a permanent opening in the stomach. With this and the tracheal wound, life may be prolonged indefi-

nitely, without it there is the prospect that she will not live more than a few weeks or months. The alternative has been presented to her, and, with some reluctance, she has consented to my doing whatever I may think best. The emergency here is not so great but that we can proceed deliberately, and I shall, therefore, open the abdomen, pick up the stomach, and sew it to the abdominal wall to-day. Two or three days later I shall make a small opening into the stomach after the adhesions have bound it closely to the parietal peritoneum, and thus there will be no possible danger of leakage into the abdominal cavity. If it were necessary, I could sew the stomach to the abdominal wall so that there would probably be no leakage, but there is no need of haste, and I shall adopt the slower and safer plan. The opening in the abdominal wall is made on the left side, parallel to and about two centimetres below the costal arch. The girl is so emaciated and her abdomen so lax that there will probably be no difficulty in finding the stomach. I expect to come immediately upon it or the colon, depending upon which is the more distended with gas. It is necessary that one should be able to distinguish between these two organs. The stomach has a smooth wall, which is quite different from the peculiar appearance presented by the colon, with its appendices epiploicæ, and stripings of muscular tissue.

I have done the operation two or three times under cocaine; but this girl is nervous and frightened, and I prefer to use a general anæsthetic. The external opening I can make as long as I choose, the deeper down I go the more I shall shorten it. After checking hemorrhage the peritoneum is cut, and now I have reached the stomach, transfixed it with a needle, and I am now sewing it to the parietal peritoneum. You notice that the girl has shown no tendency to vomiting. This, I believe, is due to the fact that the chloroform is administered through the tracheotomy-tube. In the ordinary method of administering an anæsthetic—through the mouth and nose—the secretion of saliva is stimulated, and the swallowing of saliva, mixed with ether or chloroform, is apt to excite vomiting. Still, it must be acknowledged that there is a great difference in patients with regard to their susceptibility to reflex vomiting, and some who take an anæsthetic in the ordinary way have not a particle of nausea after the operation.

In this operation we take advantage of what is in so many cases undesirable, namely, the formation of a fibrinous exudate, which agglutinates the surfaces of the peritoneum and seals its cavity hermetically. The exudate is thrown out within an hour, and is quite firm after six hours; but in such a case as this we can wait for true organization to occur in it, and have the absolute assurance of safely before opening the stomach. The external wound is now partially closed with catgut sutures, dusted with iodoform, and the skin is protected by iodoform gauze from the pressure of the ends of the needle which holds the stomach in place. The opening into the stomach will be made with a small tenotome. It can be stretched at any time, and it is better to have the tube tightly grasped to prevent leakage

around it. The girl will probably have to be nourished in this way as long as she lives,—not a pleasant prospect, but the best that we can offer her.

On withdrawing the trachea-tube I try to dilate the opening in the pharynx, but find that I can scarcely push my finger hard enough to make any impression on the dense cicatricial mass. The tissue is probably a syphilitic new growth, the disease being probably inherited. I cannot imagine tubercular trouble in this locality that should lead to such dense cicatricial contraction without also tending to ulcerate.

REVIEW OF MEDICINE.

MEDICINE.

IN CHARGE OF JOSEPH P. TUNIS, A.B., M.D.,

Assistant Demonstrator of Surgery in the University of Pennsylvania; Surgeon to the Dispensaries of the Presbyterian and of the Methodist Episcopal Hospitals; Visiting Physician to the Children's Dispensary of St. Clement's Hospital and to the Church Home at Angora, Philadelphia.

Hay Fever and Hay Asthma. (*Bristol Medico-Chirurgical Journal*, June, 1892.) By P. Watson Williams, M.D.

The writer divides paroxysmal sneezers into three classes: (1) those in whom the lesion is entirely peripheral, such as the earlier and milder forms of true hay fever, in which the symptoms appear only when the patient is exposed to such irritating causes as pollen and the like, and for these local treatment rarely fails; (2) those in whom the symptoms, in the first place induced by peripheral irritation, have become more or less persistent, even in the absence of any pollen or special irritating particles; (3) idiopathic cases, not due to peripheral irritation at all. Dr. Williams can speak authoritatively on this subject, as he has been a sufferer from hay fever himself until he adopted a method of treatment which afforded the most welcome and complete relief. In America this affection is known as "Rose-cold."

After describing the predisposing causes as well as the conditions and symptoms of this disease, the treatment is discussed under two heads: (*a*) radical, and (*b*) palliative. The former (*a*) generally gives very excellent results in simple hay fever, and not infrequently a perfect cure can be obtained in cases attended with asthma. The nose should be sprayed with a solution of iodic-hydrarg. 1–1000, after an application of a solution of cocaine to the mucous membrane. As soon as the effect of the cocaine passes off the pain is intense, and lasts for two hours. Morphine should therefore be given hypodermically immediately after the spray has been

used. The mucous membrane of the nose swells rapidly until the air passages become blocked. The conjunctiva becomes suffused and considerably irritated. In about an hour and a half or two hours the swelling and pain subside, and a condition similar to common nasal catarrh appears, which lasts from twenty-four to thirty-six hours. If this treatment is thoroughly applied at the onset of hay fever, the patient will remain free from any subsequent attacks during the remainder of the season. The method involves no destruction of tissue, and leaves the sense of smell unimpaired, which differs from the procedures recommended by many others.

Palliative measures (*b*) are eminently unsatisfactory; although effectual at first, they soon lose their power, or, at any rate, their action is only temporary, and requires constant repetition. It is a good plan to paint the inner canthus and palpebral conjunctiva with a weak solution of perchloride of mercury or nitrate of silver, commencing some days before the symptoms appear. The beneficial effect is due to their rendering the mucous membrane less susceptible, and not to their antiseptic or germicidal properties.

Non-Medicinal Remedies in Anæmia. (*New York Medical Journal*, May 13, 1893.) By Simon Baruch, M.D.

Upon the recognition of the etiology of anæmia depends its successful treatment. No hard and fast rules can be adopted. Pure empiricism is to be deprecated at all times. The reputation of iron in anæmia rests upon an entirely empirical basis. Unfavorable environment is a frequent cause contributing to the development of this diseased condition. Confinement to badly ventilated school-rooms, deprivation of out-door exercise, digestive troubles due to these conditions, improper and insufficient food and mental anxiety are recognized factors. It is of the greatest importance, therefore, to provide an ample supply of oxygen for anæmic patients in the most perfect form, namely, from natural sources, such as the fields, the woods, and the parks, or such places as are freed from human emanations. A few weeks' residence in a clean, well-aired hospital ward will do more to restore some anæmic cases to health than iron or arsenic alone. In another class of cases it is most inadvisable to recommmend active exercise. Passive exercise by massage and Swedish movements once or twice per day are far safer for some cases predisposed to dyspnœa and rapid heart's action than walking, or even riding. S. Weir Mitchell has clearly demonstrated the importance of rest, combined with massage methodically administered. Systematic exercise in the open air should be adopted as soon as possible. Careful attention to methodical feeding will accomplish more than simple directions to take good food. The same precision which is exercised in ordering medicines will, in the case of diet, produce more positive results than are usually obtained. A valuable auxiliary to the methodical application of pure air, exercise, and carefully regulated diet may be found in the use of water upon the skin.

Paradoxical as it may seem, depletion is a method of treatment, the

value of which has been clearly demonstrated. Scholz, of Bremen, has recently written a monograph on this subject, which has been generally copied in the medical journals. Boerhaave, Hoffmann, and others have recommended small bleedings for chlorosis, and it has been advised in recent times by Dyes and Wilhelmi.

Appendicitis. (*Therapeutic Gazette*, December 15, 1892.) By James Graham, M.D., of Philadelphia.

In speaking of the medical treatment of appendicitis and its limitations, the writer dwells upon the importance of confinement in bed, and, as far as possible, in one position. The diet should be limited to liquids, and the patient carefully watched. If there is a history of the recent ingestion of indigestible food, or prolonged constipation, or, on palpation, impacted fæces are discovered, small doses of a concentrated solution of a saline cathartic should be given every half-hour or hour, to be followed in a few hours by an enema, given in the knee-chest position, of two ounces of salts in a quart of warm water. If nausea or vomiting occurs, small, frequently repeated doses of calomel, combined with bicarbonate of sodium, may be substituted for the salts. An excellent way to administer these drugs is to give five grains of calomel, fifteen grains of bicarbonate of sodium, with five of sugar, stirred in a goblet of milk, and a tablespoonful given every half-hour. After the bowels have been freely moved, if the pain is slight, and it usually will be, and the patient will remain at rest, continue the small doses of salines at longer intervals; but, if the pain is severe, and the patient is restless, give a hypodermic injection of morphine, atropine in sufficient doses to stop the pain and quiet the patient, and continue either the saline cathartic or the opium treatment, according to the indications.

Locally, if seen early, from two to twelve leeches will be of service, and should be followed by the ice-bag or coil, unless disagreeable to the patient, when hot fomentations can be substituted. Vomiting may be treated by ice and iced carbonated waters internally, and mustard sinapisms externally. Prostration should be met by stimulants and tonics. The writer states that the great bulk of recognized cases of appendicitis may be cured by this treatment, as the disease becomes limited by an adhesive, localized peritonitis, and a cure results. If, however, gangrene or a slough arises, or if, from the pressure of a foreign body or fæcal concretion, perforative ulceration occurs, permitting the escape of the contents of the bowel, a surgeon should be called immediately.

Bread Substitutes in Diabetes. (*Birmingham Medical Review*, May, 1893.) By Robert Saundby, M.D., F.R.C.P.

There is no greater difficulty in the management of a case of diabetes than the provision of an acceptable but harmless substitute for bread; and, although there is no lack of articles which pretend to supply this want, they vary considerably in their mode of preparation, and some, as was pointed

out by the *Lancet* last year, are neither more nor less than frauds. The writer has given up the use of gluten bread because (1) the best contains nearly thirty per cent. of starch; (2) it is very unpalatable, and (3) it is very expensive. He states that there are many cases of diabetes in which it is absolutely necessary to stop the supply of starch as well as sugar, and where it is important to use a substitute which contains no starch at all. For this purpose he recommends Clark's Starchless Biscuits, which are specially manufactured in West Brighton, Sussex. For those who are unable to obtain these biscuits, cakes made from ground almonds form an excellent substitute. The directions for making them are as follows: Take one pound of ground almonds, four eggs, two tablespoonfuls of milk, and a pinch of salt; beat up the eggs, and stir in the almond flour; divide in twelve flat tins, and bake in a moderate oven for about forty-five minutes. The weight of the cake will be about one and a half pounds.

As a substitute for these ground-almond biscuits, cocoa-nut cakes may be made as follows: Take three-fourths of a pound of the finest desiccated cocoa-nut, one-quarter of a pound of ground almonds, six eggs, one-half a teacupful of milk; beat up the eggs, and stir in the cocoa-nut and almond flour; divide into sixteen flat tins, and bake for twenty-five minutes in a moderate oven. The weight, when baked, will be one and a half pounds. Two additional eggs may replace the milk with advantage, but they would increase the cost slightly. These ingredients are within the reach of the poorest patients. The cakes keep very well for a week. They may be sweetened, if desired, with glycerine or saccharine.

Iceland moss forms a palatable article of diet, and may be made into a pudding, which diabetics appreciate very much. It may be made absolutely free from anything harmful to them.

THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,
Professor of Therapeutics, McGill University, Montreal, Canada.
ASSISTED BY
D. I. EVANS, M.D.

Cascarine. (*Bulletin général de Thérapeutique*, March 8, 1893.) By M. Leprince.

M. Leprince appears to have isolated the active principle of the Rhamnus purshiana, commonly known as cascara sagrada. This substance, which he designates cascarine, occurs in prismatic crystals of an orange-yellow color, forming a deep reddish-purple liquid when dissolved in an alkaline solution. It is insoluble in distilled water, but is soluble in alcohol and ether. Cascarine appears to have a slight action as a cholagogue. It pro-

duces an easy action of the bowels without the griping which frequently accompanies the action of cascara sagrada. Even in large doses it does not appear to give rise to any nausea, serous diarrhœa, colic, nor does it leave subsequent constipation. The dose is from ten centigrammes to a gramme.

Heroic Alkaline Treatment. (*Revue général de Clinique et de Thérapeutique*, March, 1893.)—M. Huchard applies this name to the administration of successive doses (two drachms to ten drachms daily) of sodium bicarbonate. This procedure is specially recommended in the hyperacidity of the stomach sometimes present in diabetes. He mentions a case where the premonitory symptoms of coma diabeticum had begun, in which he employed about ten drachms of the sodium salt daily, warding off the attack successfully. He recommends this treatment as being valuable also in the following conditions: gastric crises of tabes, cardiac disease with acidity of the stomach, diseases of the liver, and, under certain conditions, in gall-stones.

The Elimination of Lead in Chronic Lead-Poisoning. (*British Medical Journal*, February 25, 1893.) By I. Dixon Mann, M.D., F.R.C.P.

This paper is the result of a series of very careful observations on the elimination of lead in cases of chronic poisoning, and in a few cases where patients were taking lead acetate for therapeutic purposes. Analyses were made at stated intervals both of the fæces and urine secreted in the twenty-four hours. The alleged elimination by the salivary glands and the skin was neglected, as having only a remote bearing, if any. Different methods of treatment were then put in force with recurring intervals of expectant treatment, the double analyses, urine and fæces, being regularly made over the entire period the cases were under observation. The following are the conclusions at which he has arrived: That lead is slowly and more or less continuously eliminated by the bowels, and to a very much lesser extent by the kidneys. That once deposited in the tissues it exists as a stable compound over which drugs have little, if any, power. That the best aids to elimination are baths and general massage, together with fresh air, good food, and all other measures by means of which the general health may be improved and healthy metabolism promoted. Whilst denying that potassium iodide promotes the elimination of lead, the possibility of its being beneficial in some other way in cases of chronic lead-poisoning is not disputed.

The Use of Soya Beans in Diabetes Mellitus. (*The Practitioner*, May, 1893.) By W. Hale White, M.D.

The author considers that we have in the Soya bean an article of diet of the greatest value to sufferers from diabetes. The beans are obtained from a Japanese plant belonging to the natural order Papilionaceæ. The beans are globular, slightly yellow, hard, and about the size of peas, splitting like them, and having much the same taste. They can be made into a soup

tasting like ordinary pea soup, or may be ground into flour, and afterwards made up into bread or biscuits. Dujardin-Beaumetz thinks that Soya bean bread contains less than three per cent. of starch, and is superior to gluten bread. The biscuits keep much better than the bread, which will only last about three days in warm weather. Diabetic patients seem to do better on a diet consisting largely of these beans than on one of gluten, and, when associated with gluten preparations, it makes an agreeable change.

Trional, the New Hypnotic. (*Phil. Medical News*, May 6, 1893.) By J. B. Mattison, M.D.—Dr. Mattison states that since last December he has given trional one hundred times, with success in ninety. All the patients were, or had been, opium, chloral, or cocaine *habitués*. The drug was given dry on the tongue. The initial doses were full forty grains for males, thirty grains for females, and were usually given at 7 P.M. In simple insomnia, doses of from twenty to thirty grains will suffice. In marked cases, from thirty to forty grains are best. Trionalism is a possibility. He states that he has found the effect of trional more certain, pronounced, and prolonged than that of sulphonal. In his opinion, it is the most powerful hypnotic at present at our command.

NEUROLOGY.

IN CHARGE OF CHARLES W. BURR, M.D.,

Pathologist to the State Asylum for the Insane, Norristown; Visiting Physician to the Home for Incurables; Visiting Physician to St. Joseph's Hospital, Philadelphia, Pa.

Periodical Sleep Seizures of an Epileptic Nature. (*New York Medical Journal*, May 20, 1893.) By George W. Jacoby, M.D.

The author reports three cases subject to attacks of the following character. More or less frequently, sometimes several times daily, and while at work or sitting quietly, the patient falls into a deep sleep lasting from a few minutes to three-quarters of an hour. In the beginning nothing will waken him,—not even the faradic brush. During the attack the face may be congested, the head falls forward on the chest, the pupils are contracted, while the respiration and pulse are slower than normal. The awaking is similar to that from normal sleep, and the patient has no recollection of what has occurred during the attack. The sufferer from the affection is apt to be normally a light sleeper and oftentimes is a somnambulist. The author states that the condition differs from narcolepsy in that in the latter there is always consciousness of what is going on during the attack, sensibility and motility are preserved, the patient is never obtuse when awakened, and the attack can be cut short by any severe stimulus. Hysterical cases will give other evidences of that condition. He concludes: "Sleeping attacks occurring alone or in combination with other symptoms, if of brief duration and

followed by amnesia, are probably epileptic in character. If somnambulism, particularly of a noisy kind, is present, this probability becomes a certainty."

The Knee-Jerks and Peripheral Neuritis in Diabetes. (*The Medical Chronicle*, November, 1892.) By R. T. Williamson, M.D. (Lond.), M.R.C.P.

In twenty-five cases out of fifty examined the knee-jerk was absent. In nineteen it was present (normal ?), and in six very feeble. It may disappear and reappear again in the course of the disease. It is lost more often in cases under than in those over thirty years of age, and in those with marked wasting than in those fairly well nourished. Its absence bears no relation to the perchloride of iron reaction, nor to the quantity, specific gravity, or amount of sugar in the urine, and cannot be regarded as evidence of the nervous origin of the disease in any particular case, but must be looked upon simply as a complication.

The neuritis sometimes present in diabetes is probably not due directly to an excess of sugar in the blood, but to the poverty of the tissue in water, the general disturbance of nutrition, acetone, or some unknown chemical substance in the blood.

Cases that should be Operated upon by Craniectomy. (*The American Journal of the Medical Sciences*, June, 1893.) By Landon Carter Gray, M.D.

Of all causes of idiocy only the premature ossification of the sutures and fontanelles, recent traumatic injuries, and hemorrhages can possibly be benefited by a craniectomy, for porencephaly, meningitis, meningo-encephalitis, and myxœdema are conditions that the surgeon's knife cannot in any way affect. The author gives the points of differential diagnosis of all these conditions. He refers to several cases in which so far the result has been good. He warns us that some time should be permitted to elapse before passing judgment on the result in any particular case, for it is natural that an infantile brain arrested in development from any cause, even when the cause is removed, should develop more slowly than a normal cerebrum. We should also be on our guard against the enthusiasm of parents and the scepticism of physicians not trained in the observation of mental symptoms. We are not warned, however, against the sometimes blind enthusiasm of brain surgeons.

Report of a Case of Cystic Tumor of the Brain Operated upon with Success. (*The American Journal of the Medical Sciences.*) By Leo Stieglitz, M.D., and Arpad G. Gerster, M.D.

The patient, a woman aged twenty-five years, was subject to convulsions, beginning in the right thumb and forefinger, extending up the arm, and sometimes becoming general, with loss of consciousness, cyanosis of the face, and frothing at the mouth. Later the general convulsions ceased. Paresis

of the right hand developed. There was no albumen or sugar in the urine; no trace of specific disease. She never had headache, nor was the head painful on percussion. The optic disks were negative. The deep reflexes were very lively on both sides, especially on the right.

The brain was opened in the region of the centre for the hand, and about an ounce of yellowish fluid gushed out. A cyst with smooth walls was found. A small layer of gray matter was removed. The following day the patient had lost all power of movement in thumb and forefinger and the entire arm was paretic. The authors regard the case as one of glioma. Since the operation the patient has had slight convulsive twitchings in the right hand, arm, and face, and recently one general convulsion with unconsciousness.

PEDIATRICS.

IN CHARGE OF T. M. ROTCH, M.D.,

Assistant Professor of Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

ASSISTED BY

E. M. BUCKINGHAM, M.D.,

Instructor in Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

The Etiology of Laryngismus Stridulus. (*Journal of the American Medical Association*, January 21, 1893; *Archives of Gynæcology, Obstetrics, and Pediatrics*, March, 1893, p. 122.) By John H. Roe, M.D.

In the light of our present knowledge, the theory of Marshall Hall is, in the opinion of the writer, the only one at all satisfactory. This condition he thinks can be explained by the fact that the laryngeal nerve-centres are made susceptible by irritation of the larynx, and that more or less continued irritation has the power to excite these centres in the medulla. Hence an irritation of the larynx that would at first have no perceptible effect, would, when the nerve-centres had become irritable and hyperæsthetic, have the result of causing spasm of the parts under their control.

In the study of the natural history of laryngismus stridulus, we see that influences and conditions which predispose to laryngeal irritation and disease are exactly the conditions that predispose to laryngismus stridulus.

This disease is of most frequent occurrence in ill-nourished and rachitic children, and during the early part of the year, when the system is depressed by long confinement in-doors, and when the atmosphere is most irritating. Heredity has been thought in some instances to play an important part in its production. Children subject to snuffles, and those disposed to frequent colds in the head and to sore throat, are especially liable to this affection.

Various subjective conditions which may have the effect of causing irritation of the larynx are also liable to cause attacks of laryngismus stridulus,

as in the case of irritable children who indulge in much crying, thereby breathing largely through the mouth.

Dr. Roe concludes that in the causation of laryngismus stridulus we must have (1) a chronic irritation of the larynx, (2) an abnormal activity of the laryngeal motor centres in the medulla, rendering them more susceptible to irritation of the peripheral filaments as a result of irritation of the larynx. (3) An unequal susceptibility of the adductor and abductor muscles to local irritation, and also to the normal blood stimulus. The abductors of the larynx, situated on its outer portion, are less subject to local irritation: their motor centre in the brain is less excited and less susceptible to local stimulants, and thus spasm of the abductor is less persistent when it occurs.

Transmission of Pneumonia from Mother to Fœtus. (*Bulletin of Johns Hopkins Hospital*, December, 1892; *Archives of Gynæcology, Obstetrics, and Pediatrics*, April, 1893, p. 122.) By Dr. William H. Welch.

Dr. Welch says that transmission of pneumococci from the mother to the fœtus has been demonstrated in human beings and in animals.

Birsch-Hirschfeld reports a case where the mother, on the fourth day of a croupous pneumonia, gave birth to a seven months' still-born fœtus with intact membranes. There were hemorrhages in the maternal and the middle parts of the placenta. The only lesions noticed in the fœtus were ecchymoses in the renal pelvis. Typical virulent pneumococci were found by culture in the liver, heart's blood, and umbilical vein of the fœtus, also in the placenta.

As actual pneumonia was found only in infants who had lived some hours after birth, Netter concludes that it is necessary that the child should have breathed in order to acquire localization of the pneumococcus in the lung.

It is probable, says Dr. Welch, that transmission of pneumococci from the mother to the fœtus is exceptional in the case of human beings. Levy did not find any organisms in a five months' fœtus born when the mother was affected with croupous pneumonia.

Suppurative Disease of the Ear. (*Med. Press and Circular*, December, 1892; *Archives of Gyn. Obstet. and Pediat.*, April 1893, p. 161.) By Dr. G. P. Field.

Dr. Field says that in scarlatina with suppurative disease of the ear paracentesis is often urgently required. Although in this disease the drum, as a rule, gives way spontaneously, and pus is got rid of without danger to life, yet the hearing may be partly or wholly destroyed by the natural process of evacuation, and perforation may be permanent. When paracentesis is done, however, the clean cut almost invariably heals well and rapidly, leaving the hearing unimpaired. He therefore recommends in all cases, whether from scarlet-fever, measles, or from acute inflammation of the drum, that if the temperature suddenly rises without evident cause, the ears

be looked to, and be promptly treated by puncture should there be any bulging of the membrane.

Not only could many lives be saved by this procedure, but thousands of people would, he thinks, be spared permanent loss of hearing. In scarlet-fever, children perish by hundreds, not from the original disease, but from one of its usual concomitants,—undiscovered acute aural inflammation; the temperature cannot be lowered, for, unfortunately, the membrane does not give way, and meningitis and speedy death occur. In diphtheria, as in scarlet-fever, the possibility of otitis occurring must be borne in mind.

Perforation may occur in the course of typhoid, influenza, septicæmia, bronchitis, pneumonia, small-pox, syphilis, Bright's disease, and in diabetes. The drum is often in influenza the seat of hemorrhagic exudation, but in influenza perforations of the drum seem to heal readily.

In tuberculosis, suppuration of the middle ear runs its course without pain; but, in the writer's experience, aural discharge in consumption always points to an early death.

So far as can be observed, the middle ear is very seldom, and the Eustachian tube never, attacked by syphilis. It must be remembered, however, that suppurative otitis may be entirely caused or greatly modified by syphilitic taint.

The author states that Dr. Carrells, of Glasgow, first states that inhalation of sewer gas may cause otitis, septic germs from the gas finding their way to the tympanum by way of the Eustachian tube, find there conditions favorable to their development, and the writer believes he has many times seen otitis caused solely by emanations from defective drains.

Relation of Rheumatism to Chorea. (*Archives of Pediatrics*, and *Archives Gyn., Obstet., and Ped.*, April, 1893, p. 163.) By Dr. Charles W. Townsend, Dr. Floyd M. Crandall, and Dr. Samuel S. Adams, at Am. Pediatric Soc. Meeting, May 4, 1892.

Papers treating on chorea were read by the three gentlemen mentioned in the title, and their conclusions are given below.

Dr. Townsend concludes,—

(1) Fright, eye-strain, debility, and school-pressure, particularly the latter, which often includes some of the former, are potent, exciting causes of chorea.

(2) Rheumatism, although absent from the history of at least half the choreic patients, occurs with greater frequency among the choreic than among the non-choreic cases.

(3) There is an intimate relation between chorea and rheumatism.

(4) The heart murmur so frequently heard in chorea, sometimes associated with chorea and sometimes not, is in a considerable proportion of the cases due to endocarditis, and leads to organic valvular disease.

Dr. Crandall in his paper states that he should class rheumatism, fright, hysteria, excitement, and pregnancy, not as all powerful agents for the pro-

duction of chorea, but rather as exciting agents for the production of the disease in subjects predisposed to it, the most universal and potent of which is rheumatism.

Dr. Adams concluded,—

(1) That chorea is due to rheumatism in but a small percentage.

(2) That the heart murmurs are hæmic in the largest number of cases.

(3) That the successful treatment would seem to exclude latent or apparent rheumatism.

(4) That anæmia and chlorosis are well marked in nearly all cases.

(5) That severe impoverishment is by far the most potent factor.

Pin-swallowing. (*British Medical Journal*, 1893, i. p. 122; *Archives of Pediatrics*, April, 1893, p. 360.) By Dr. Knott.

The writer, in a paper before the Royal Academy of Medicine of Ireland, reported several cases of pin-swallowing. One child of three years passed by the natural passages a pin that had been swallowed sixteen days before. Another child of fourteen months swallowed a pin and passed it after an interval of eight days. In another case he had extracted from the inside of the thigh of a child, a little over two years old, a pin that had been swallowed nine months before. In none of these cases were there any troublesome symptoms after the accident.

The president said that cases of supposed pin-swallowing were not to be treated with contempt, but the precautions laid down as to diet should be adopted.

Purpura Fulminans in Children. (*Medical and Surgical Reporter*, 1892, lxvii. 836; *Archives of Pediatrics*, April, 1893, p. 365.) By Dr. Clara T. Dercum.

Of the twenty cases reported, six had no prodromata, one was preceded by malaise, others occurred during convalescence from pneumonia, scarlet-fever, measles, whooping-cough, others during the course of gastro-enteritis and impetigo. Three were followed by gangrene, and of these three, two died. Thirteen cases had hemorrhages into the subcutaneous tissue only, and seven had hemorrhages into the subcutaneous tissues and from the mucous membranes. Hemorrhages occurred from the stomach and bowels and nares.

Tumors of the Bladder in Children. (*Mal. de l'Enf.*, 1892, p. 290; *Archives of Pediatrics*, February, 1893, p. 191. By Phocasdille.)

Conclusions from thirty cases are as follows: Tumors of benign character are less frequent than malign. Among functional phenomena, hæmaturia seems to be comparatively rare, or not to have been studied among children. Troubles of micturition are, on the contrary, very common.

In girls, the tumor rapidly dilates the urethra and stands out through the vulva. The diagnosis is then easy. With boys, the bladder dilates and

appears to contain much urine, but upon catheterization the quantity is found to be small. The rectal touch, and still more the bimanual, help to make the diagnosis.

In twelve cases of operation among girls, mostly by the natural passages, there have been ten deaths. In seven operations among boys, there have been five deaths. All the recoveries were in cases of benign tumors.

SURGERY.

IN CHARGE OF B. FARQUHAR CURTIS, M.D.,
Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

Dilatation of the Gall-Bladder a Sign of Pancreatic Tumors. (*Bulletins et mémoires de la Société de chirurgie*, Paris, xviii., 1892.) Discussion by MM. Terrier, Reclus, Reynier, and others.

Terrier claimed (page 761) that dilatation of the gall-bladder would decide the diagnosis between calculus impacted in the common duct and tumor of the head of the pancreas (cancer) in favor of the latter, for the gall-bladder was almost always found atrophied, and in many cases could not be found at all when a calculus had been impacted for a long time in the common duct, owing to the atrophic and cicatrizing changes following that condition. If a calculus were impacted in the cystic duct, however, dilatation of the bladder was a common consequence. He has known one case of sclerosis of the pancreas to be followed by obstruction of the common duct and distention of the gall-bladder. This diagnostic point was noted by Courvoisier.

Reclus (page 767) brought forward four cases from literature and elsewhere to show that the rule was not invariable, and that it was not impossible to have dilatation of the bladder with impaction of a calculus in the common duct.

Reynier (page 803) adduced two cases of cancer of the pancreas with biliary obstruction and distention of the gall-bladder.

Tillaux (page 822) added another case of the same kind, but Jalaguier spoke of a case of his own in which, with a distended gall-bladder, a calculus was found in the common duct.

The Technique of Gastrostomy. (Beitrag zur Technik der Gastrostomie bei Oesophagusstenosen. *Berliner klinische Wochenschrift*, 1893, p. 6.) By Dr. W. von Noorden.

Von Noorden reports from Mikulicz's clinic five cases of gastrostomy performed according to the method suggested by Witzel, who inserts a small rubber tube in a minute opening in the stomach, draws the walls of the latter over the tube in parallel folds secured by sutures, so that it makes an oblique canal through the stomach wall, and then secures the stomach to

the abdominal parietes in the ordinary way. The intention is to make a canal which will not tend to dilate, and which will be compressed so as to retain the stomach contents without any special apparatus. This attempt appears to have been successful, for the five cases here reported were as good in their results as those reported by Witzel himself. In making the abdominal wound care is taken to divide the muscles parallel to their fibres, so that there is some tendency to a natural sphincter action about the canal. Mikulicz, who formerly did not think highly of gastrostomy, and always postponed it as long as possible, has altered his opinion on account of the advantages secured by this method, and now performs it early in the course of the disease. Mikulicz himself, in a postscript, draws attention to the fact that fistulæ made in this way will close spontaneously, quoting one case which closed in sixteen days after removal of the drainage-tube. This spontaneous closure would be of great advantage in cases where the opening was made only temporarily, as in cicatricial strictures in which there was hope of later cure by dilatation. He thinks that the tightness of the fistula is due at first to its oblique course through the walls of the stomach, where its sides would be pressed together by an increase of pressure within the stomach. Later the course of the sinus becomes more direct by cicatricial contraction, but folds of mucous membrane then lie about its inner opening and act as valves to prevent all leakage, so that in intelligent patients the tube may be withdrawn and a simple pad will keep them dry, the tube being introduced for each meal.

Extirpation of Popliteal Aneurisms. (Die Totalexstirpation des Popliteal-Aneurysmas. *Archiv f. klin. Chirurgie*, 1892, xliv. 809.) By Dr. Meinhard Schmidt.

Schmidt reports a case of bilateral popliteal aneurism in which he extirpated the sacs in two operations with complete success,—a slight gangrene of the edges of one wound being the only accident. He tabulates twelve cases so treated with one death (sepsis), and only one case of circumscribed gangrene of the sole of the foot, although in two cases the vein was slightly wounded, and in three cases considerable portions of the vein had to be removed. In one case, too, both tibial arteries had to be ligated. Among them he does not include the arterio-venous aneurisms. He therefore concludes that this method of treatment is perfectly safe, and even suggests that, if the vein is troublesome in the dissection, a portion of it should be removed as well.

Operations to Relieve Compression in Fractures of the Spine. (Ueber operative Eingriffe bei Compression des Rückenmarks durch Verschiebung der Wirbelkörper. *Archiv f. klin. Chirurgie*, 1892, xliv. 833.) By Dr. Urban.

Urban recommends exposing the spinal cord by raising a flap including the spinal processes, marked out by two parallel incisions one on each side

of the spinal processes, and a single cross cut either above or below the region to be uncovered, a method resembling the H-incision with osteoplastic laminectomy, used by Dawbarn. He reports two cases so treated, one a fracture of the first lumbar vertebra operated upon six months after injury, with paralysis of the bladder, rectum, and lower extremities, in which the paralysis was almost cured, improvement beginning four months after operation. The other case was operated upon nine months after injury,—fracture of the twelfth dorsal with the same paralysis, but as the report was made only a few weeks after the operation, the only change noted was in the sensation, which returned within twenty-four hours. Urban lays stress upon the necessity of removing all projecting fragments and callus anterior to the cord, as well as relieving it from pressure by cutting away the arches, if improvement is to be obtained.

Tuberculosis of the Thyroid. (Struma Tuberculosa. *Beiträge zur klin. Chirurgie*, x. 1.) By Prof. P. Bruns.

Bruns reports a case in a woman forty-one years of age, who had always had a small goitre, but in the preceding six months it had begun to grow rapidly and caused dyspnœa, having reached the size of a child's fist. Being supposed to be a malignant tumor, it was extirpated. Examination proved it to be tubercular, evidently primary, for no other organ gave signs of the disease, and thus forms the first case on record of tuberculosis originating in that locality. The thyroid is quite commonly affected in miliary tuberculosis, and occasionally secondarily to some other organ, but this case shows that it is possible for it to present itself as a tumor to the surgeon.

Neuromata. (Beitrag zu der Lehre von den Neuromen. *Beiträge zur klin. Chirurgie*, x. 13.) By Dr. Edwin E. Goldmann.

Goldmann reports a case of plexiform neuroma of the cervical plexus, extirpation, no recurrence; a case of neuroma of the tenth intercostal space, recurrence after operation, with extensive intra-thoracic tumors, multiple neuromata; and a case of spindle-cell sarcoma of the sciatic nerve, operation, recurrence within six months. He accepts the classification of Virchow, distinguishing between true and false neuroma, the former being those in which there is a true increase in the nerve-fibres. But he is evidently very sceptical as to the existence of any true neuromata. His researches have convinced him that nearly if not all tumors forming upon nerves do not contain newly formed nerve-fibres, but only new connective tissue-fibres and cells springing from the endoneurium, the perineurium acting as a strong limiting capsule to the tumor, resisting its spread into the surrounding parts even when it has assumed a malignant type. Even in the multiple tumors of the skin, which were shown by von Recklinghausen to be such constant accompaniments of multiple neuromata (or elephantiasis nervorum), Goldmann is unable to see any changes in vessels or glands, and he believes that the changes are limited strictly to the nerve filaments, pre-

vious observers having mistaken the fibrous growth from the terminal filaments of nerves on the walls of the blood-vessels or in the sebaceous and sweat glands for changes in the structures of the organs themselves.

He believes the disease to be of congenital origin, similarly to Cohnheim's theory, and draws attention to the curious distribution of the tumors, involving in some cases every branch and filament of a given nerve, and in others attacking some branches and leaving others entirely free. Some cases which show no malignant structure yet have two attributes of malignancy, namely, recurrence and distant metastasis, as well as a tendency to invade neighboring parts. Single neuromata he considers due to the same causes as the multiple, and believes that from the most general elephantiasis nervorum a regular gradation of cases can be seen down to the single tumor. Why tumors of previous benign course should alter and become malignant, he is unable to explain, but he draws attention to the fact that a malignant (sarcomatous) structure of the tumor is often found with a benign history.

GENITO-URINARY SURGERY.

IN CHARGE OF WILLIAM K. OTIS, M.D.,
New York.

Impassable Stricture; Suggested Means to overcome it. (*British Medical Journal*, April 15, 1893.) By Dr. James MacMunn.

The difficulty and danger of passing small instruments is not only due to the fact of the eccentric position and narrowing of the stricture aperture, but also to the dilatation of the urethra anterior to it, as well as behind, which so often exists. Flexible instruments wabble about the canal, and cannot be directed. Inflexible ones are dangerous, and cannot always follow tortuosities.

In cases of difficulty, if the shaft of a silver catheter (generally of large size) or an endoscopic tube be passed quite down to the stricture, we can by this means widen out the aperture, or, more important still, alter the axis of the tube, and use the filiform instrument which it contains systematically until we succeed in entering the opening. This procedure will nearly always succeed in idiopathic cases.

Hypodermic Medication in Syphilis. (*New York Medical Journal*, April 15, 1893.) By Dr. L. Wolff.

This author considers that the indications for the hypodermic medication of syphilis are: In cases where the symptoms required urgency of treatment, the injection of a quarter of a grain of corrosive sublimate should be employed, at first daily and subsequently every other day, until about twenty-five injections had been given. If after this all the symptoms had not

entirely subsided (as shown by entire absence of all pigmentation), injections of the thirty-per-cent. gray oil should be resorted to, administering 0.1 cubic centimetre in one or two places in the back once a week, until six to eight injections had been made. If, after a shorter or longer period without medication, further manifestations of syphilis should appear, the same series of injections with gray oil should be made, and thus continued until, after long lapses between treatment, no further return of the lesions appeared.

The injections of corrosive sublimate as described have the advantage of more rapid action, and will often suffice; when relapses occur, however, the injections of gray oil are less painful, and promise greater immunity from subsequent relapses. [? W. K. O.]

ORTHOPÆDICS.

IN CHARGE OF REGINALD H. SAYRE, M.D.,
Assistant to the Chair of Orthopædic Surgery, Bellevue Hospital Medical College, New York.

Congenital Dislocation of the Hip; Hoffa's Operation.

Before the Chirurgical Society of Paris, January 4, 1893, Dr. Kermisson reported a case of congenital dislocation of the hip which had been operated on after Hoffa's plan by Dr. Denuce (Bordeaux). The patient, a little girl, had a congenital dislocation of the hip, with two inches of shortening, marked lordosis, and a lateral curvature of the spine. An incision three inches long, parallel with the femur, was made from one inch above the tip of the great trochanter. The muscles were removed from the latter, and the acetabulum gouged out sufficiently large to receive the head of the bone, which was then pulled down and inserted into it. The periosteal flap taken from the acetabulum was sutured. A drainage-tube was used, the detached muscles restored to position, and the joint fixed in place by a plaster-of-Paris spica bandage, while continuous extension was made by a weight of five pounds and a pulley. The dressing was changed in three weeks, the wound healed in five weeks, and the patient walked with crutches in eight weeks. A year after the patient still walked well, the lordosis had disappeared, the lateral curvature was much less marked, and the bones had remained in position. There was still one inch shortening, partly to be accounted for by alteration in the size of the femoral neck, and partly by general atrophy of the entire limb, which had been noticed at the time of operation.

A Rare Case of Multiple Congenital Deformity of the Lower Extremities. (Un caso raro di deformità congenite multiple degli arti inferiori. *Archivo di Ortopedia,* Anno x. No. 3.) By Dr. Bernacchi.

The patient, a boy of fifteen, is well nourished and of normal development, except his lower extremities, which present various abnormalities.

The left lower extremity shows the evidences of congenital dislocation of the hip, the trochanter major being four centimetres above Nélaton's line, the acetabulum unusually large, and movements in all directions more or less limited. The knee-joint and patella are normal, but there is an absence of the tibula, and in consequence there is a marked valgus, the patient walking on the inner malleolus, which has developed a large callosity.

The right lower extremity is notably shorter than its fellow, owing to the absence of the femur, the head of the tibia articulating with the pelvis in a way to permit limited flexion, good adduction, moderate abduction, and very free rotation. There is a scar on the shin similar to one on the left leg, and the foot is in the position of valgus. Part of the metatarsal bones are missing, and there are only three toes.

When resting, the patient supports himself on the right hand and left leg, the knee being bent so as to bring the right foot in contact with the floor; or he can stand on the left foot by aid of a cane in the right hand, the right leg hanging free. He has been treated by amputation of the right foot, to which an artificial leg has been applied, which equalizes the length of the legs, and with this and a shoe for the valgus foot he walks fairly well.

Metatarsalgia (Morton's Painful Affection of the Foot). (*Annals of Surgery*, June, 1893.) By Thomas S. K. Morton, M.D., of Philadelphia.

The disease under consideration may be described as a painful affection of the plantar digital nerves, directly caused by pressure upon or pinching of them by certain portions of the metatarso-phalangeal articulations—especially the fourth.

The reason for the fourth toe being the almost invariable seat of origin of the train of painful and neurotic symptoms to be described is ascribed to anatomical causes by Morton in the following language:

"The occurrence of neuralgia may be understood by a reference to the anatomy of the parts. The metatarso-phalangeal joints of the first, second, and third toes are found on almost a direct line with each other, while the head of the fourth metatarsal is from one-eighth to one-fourth of an inch behind the head of the third, and the head of the fifth is from three-eighths to half an inch behind the head of the fourth; the joint of the third, therefore, is slightly in advance of the joint of the fourth, and the joint of the fifth is considerably behind the joint of the fourth.

"The fifth metatarsal joint is so much posterior to the fourth that the base of the first phalanx of the little toe is brought on a line with the head and neck of the fourth metatarsal, the head of the fifth metatarsal being opposed to the neck of the fourth.

"On account of the character of the peculiar tarsal articulation, there is very slight lateral motion in the first three metatarsal bones. The fourth has greater mobility, the fifth still more than the fourth, and in this respect resembles the fifth metacarpal. Lateral pressure brings the head of the fifth metatarsal and the phalanx of the little toe into direct contact with the *head and neck of the fourth metatarsal*, and to some extent the extremity of the fifth metatarsal rolls above and under the fourth metatarsal.

"The mechanism of the affection becomes apparent when we consider the nerve supply of the parts. The branches of the external plantar nerve are fully distributed to the little toe and to the outer side of the fourth; there are also numerous branches of this nerve deeply lodged in between these toes, and they are liable not only to be unduly compressed, but pinched by a sudden twist of the anterior part of the foot. Any foot movement which may suddenly displace the toes, when confined in a shoe, may induce an attack of this neuralgia. In some cases no abnormality or other specific cause for the disease has been detected."

This explanation undoubtedly will account for the great majority of cases, and perhaps all could be ascribed to pinching of the nerves between the metatarso-phalangeal articulation. Yet there have been reported a few cases where the transverse metatarsal ligament has appeared to be lax or ruptured, thus permitting the metatarsal heads to descend upon the nerves.

However, while the exact etiology of the affection is of great scientific interest, clinically it is of small account, as excision of the fourth metatarso-phalangeal articulation, as originally proposed by Morton, or amputation of the fourth toe, including the corresponding metatarsal head, invariably has secured an absolute and permanent cure. No dissections of the diseased regions have yet been possible, nor have the nerves been in any case excised so that microscopical examination could be made. The author has carefully examined a number of the joints that have been removed for the cure of the affection, and in no instance has he been able to prove any anomaly or disease.

Metatarsalgia is, in its lesser degrees, a very common disease. Almost every one has suffered more or less, at times, from neuralgic twinges radiating from the joint in question. These mild cases occasionally develop into the more severe forms. In the former occasional attacks of pain are often followed by periods of complete immunity.

Morton made extended inquiries among retail shoe dealers, and found "that this peculiar condition had not only been frequently recognized by them, but that it is also considered to be quite common. Almost every intelligent shoe retailer has seen a number of persons to whom this disease has been a source of frequent suffering, and who believe their malady to be beyond relief by medical art."

So recently as 1891 Bradford[1] has written:

"It is somewhat singular that an affection that is not infrequent in these

[1] Boston Med. and Surg. Journal, 1891, vol. ii. p. 52.

days of thorough investigation of all ailments, should have attracted but little attention, either in the researches of surgeons or of neurologists. The cases are so usually classed among the ill-defined hysterical or nervous affections, and not thoroughly investigated; or they are deemed to be gouty, as in the minds of many practitioners, are frequently all affections of the toes."

So far as relates to symptomatology, Morton mentions the *imperative necessity of removing the shoe*, regardless of surroundings, when a paroxysm comes on, as a pathognomonic symptom of the disease. It may also be said that no evidence of the disease can usually be felt or seen, except that the parts are often of a bluish tint and cold, from venous stasis, and have a tendency to profuse perspiration.

Treatment.—The less severe forms of metatarsalgia may often be prevented from running into the more serious types by proper shoe construction or by wearing a narrow flannel bandage about the ball of the foot. Morton, whose suggestion the latter is, directs that the bandage be two inches wide, and long enough to wrap neatly and firmly about the metatarsus some five or six times. The end is pinned, and the stocking drawn over. This has given marked relief in a number of cases.

The shoes for persons suffering from this disease should be firm-soled, make no lateral pressure upon the metatarsus, yet have the instep tight enough to prevent the foot slipping forward. The great object of the shoemaker should be to prevent pressure, either lateral or antero-posterior, upon the metatarsal arch, and also to prevent any rolling motion of the outer metatarsal heads upon their fellows. A broad, rigid sole would appear to best fulfil this last indication. Bradford proposes the use of digitated stockings in these cases, with a view of keeping the toes further apart. As the foot spreads when the weight of the body is thrown upon the member, it is apparent that the individual should be standing when the measurements for shoes are made, as has been advised by Grün.

The use of various pads in the shoe and about the toes, also such measures as the hollowing out of cavities in the sole opposite one or more of the metatarsal heads have been tried, but invariably found unsatisfactory. A variety of the affection calling for so much attention to secure comfort would clearly demand the certain cure to be afforded by operation. On the other hand, prolonged rest in bed will benefit all cases more or less, and occasionally secure relief for long periods, or even permanently cure the milder phases of the disorder.

Operative treatment should be limited to excision of the metatarso-phalangeal articulation from which the neuralgia radiates, or, perhaps, to amputation of the corresponding toe above the joint, as has been recommended by Morton and endorsed by other writers.

For excision of the metatarso-phalangeal joint an incision on the dorsum of the foot is best. Cut longitudinally on the fourth toe from the proximal inter-phalangeal joint to an inch beyond the metatarso-phalangeal joint; divide the extensor tendon, free the bone from the soft parts with

the knife handle, cut the phalanx and the fourth metatarsal bone behind its head with bone pliers, remove the piece of bone, cut the flexor tendon which lies in the bottom of the wound, having lifted it by forceps.

It is not usually necessary to tie any vessels. The wound should be closed without drainage, and will unite by first intention if antisepsis has been preserved.

OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF JOHN M. KEATING, M.D., LL.D.,

Colorado Springs, Colorado; Fellow of College of Physicians of Philadelphia; Gynæcologist (Emeritus) to St. Agnes's Hospital, Philadelphia; formerly Visiting Obstetrician to the Philadelphia Hospital (Blockley); Editor "Cyclopædia of the Diseases of Children," etc.

Gonorrhœal Infection finally producing Ovarian Abscess. (*American Journal of Obstetrics*, etc., April, 1893.) By F. B. Robinson, M.D.—A specimen of this character was submitted to the Gynæcological Society of Chicago, December 16, 1892. The woman had been married seven years to a man who had been previously treated by several physicians for gonorrhœa. In discussing this case the author makes the following statement: "This is a typical example to show that the ovaries become secondarily diseased from the tube. The course of gonorrhœa in women is mainly along the cylindrical epithelium. First, the gonococcus infects the urethra and vulvo-vaginal glands; second, the endometrium suffers, as it is cylindrical epithelium; third, the same remarks apply to the cylindrical epithelium of the endosalpinx; fourth, the germinal epithelium (cylindrical) of the ovary becomes infected; and, fifth, the gonorrhœal infection spreads into the membrane granulosa (cylindrical epithelium) and ovarian cystic degeneration occurs, and it may require years to produce pus in an ovary from gonorrhœa."

In the discussion which followed this reported case the author stated that when he found the tubes inflamed and knew it was of gonorrhœal infection, he had yet to know of a woman getting well. They get better, but they have a recurrence. Therefore, when he finds the appendages of a woman diseased, and that woman has had gonorrhœa, he tells her that she is better off without her tubes, but not that she will die.—The experience of Dr. H. T. Byford did not agree with this, as he stated that he had seen cases of gonorrhœal salpingitis get well.—Dr. F. Henrotin made a similar statement, illustrating his remarks by a case where the husband had acute gonorrhœa and the wife contracted it with a vulvitis, inflammation of the vulvo-vaginal glands, and, finally, extension to the endometrium; but in this case no mention was made of a distinct salpingitis, though possibly, from the reading, it existed. It must be borne in mind, according to the statement of Bumm (*Münchener Medicinische Wochenschrift*, 1891, Nos. 50 and 51), that infection does not pass readily to the tubes and peritoneum, that the external and internal os prevent the gonococci from

entering the uterine cavity, and that the gonococcus thrives but poorly upon serous surfaces when it enters the peritoneum, and then usually takes the septic form of disease. The statistics which he gives of fifty-five cases show fifty cases had gonorrhœal urethritis, forty-one gonorrhœal cervicitis, eight infection of the uterine cavity, and two infection of the tubes. The report of this discussion is very interesting, and deserves careful reading by those who are doing much work in this line of practice. [Undoubtedly the more one sees of pus-tubes the more one is impressed with the large proportion of gonorrhœal origin. It has been before noted in our abstracts the interesting fact that many cases of latent gonorrhœa in the married woman is rendered much more acute and productive of future trouble by the pregnant state, thus accounting, probably, for cases of post-partum tubal disease. —K.]

Pelvic Disease in the Insane. (*Report to Board of Trustees, State Hospital for the Insane, Pennsylvania.*) By Alice Bennett, M.D.—The summary which is attached to this report is interesting, as it covers the ground of the present discussion that is going on on this subject. The care of the insane certainly involves the same attention to their bodily ailments as is given to those in full mental vigor, and if, in any special case, any reasonable hope is offered that the insanity is caused by any removable condition, the operation, which may be in that way partially experimental, is just as much a matter of necessity as the trial of a new drug, or any other therapeutic or hygienic measure. The summary is as follows: "Of six cases operated upon, three, or half the number, have perfectly recovered in body and mind. One is much improved. One is improved in some respects and not in others. One died. It is of interest to note that five of the six cases were of puerperal origin. I want to emphasize the following facts: 1. That cases were selected for operation only after thorough and searching examination, with consultation, often repeated. 2. That each case selected for operation was the subject of serious bodily disease, such as may properly be, and habitually is, treated by surgical interference, quite apart from the insanity, which is only an incident, or symptom, of such disease. 3. That in every case of operation performed the consent of the nearest relative, or guardian, of the patient was obtained. Finally, I want to say that I believe that many cases now under our care, and others yet to come, might be saved from years of physical suffering, from hopeless dementia; even life itself might sometimes be saved by appropriate surgical treatment. In other and similar cases in the future I cannot reconcile it to my conscience to be merely a passive observer and recorder of their decline. If, in Pennsylvania, insanity is to be a barrier to the treatment of bodily diseases, it will be my duty to urge upon the guardians of these helpless ones, incapacitated for speaking on their own behalf, the necessity for taking their suffering charges, outside the State limits if need be, wherever they shall be free to receive the treatment adapted to their needs."

Papillomatous Tumors of the Ovary. (*Johns Hopkins Hospital Report*, vol. iii., Nos. 1, 2, 3.) By J. Whitridge Williams, M.D.

1. Most papillomatous cystomata are not developed within the broad ligament; the majority of papillomatous growths being of other than ovarian origin.

2. The growths are derived either from the Graafian follicles or germinal epithelioma; their origin from relics of the Wolffian body or from the tubal epithelium, while possible, has yet to be demonstrated.

3. As the origin of both the ciliated and non-ciliated papillomatous growths is identical, we consider that there is no justification for considering them as constituting two distinct classes of growths.

4. Polymorphism of the epithelium is not characteristic of ciliated papillomatous growths.

5. The formation of psammoma bodies is not pathognomonic of the ciliated papillomatous cystomata, for they occur in the superficial and non-ciliated varieties; and also in the normal ovary and tube, as well as in other parts of the body.

6. The superficial papillomata are of far more frequent occurrence than is generally supposed.

7. They are very closely related to the papillomatous cystomata and are always derived from the germinal epithelium.

8. All varieties of papillomatous growths of the ovary have a marked tendency towards the formation of secondary growths. The majority of secondary growths are produced by mere extension of the growth by continuity of tissue or by implantation of small particles of the tumor upon the peritoneum. In rare instances true metastases may be formed.

9. The papillomatous tumors possess a marked tendency to become malignant, and even the anatomically benign growths, in view of their tendency to the formation of secondary growths, are to be considered as clinically malignant.

10. The results of operations, even after the formation of secondary growths upon the peritoneum, are quite satisfactory.

[We desire to call especially attention to this admirable monograph as well as to the one on "Tuberculosis of the Female Generative Organs," which is in the same cover with it. They are well worth most careful study, as they bear impress of erudition and thorough pathological research. Europe will have to look to her laurels as Welch and Prudden gain in momentum.—K.]

OPHTHALMOLOGY.

IN CHARGE OF J. E. HARPER, A.M., M.D.,
Chicago, Illinois.

Conservative Treatment of Strabismus Convergens.—In an article on this subject (*American Journal of Ophthalmology*, March, 1893), Dr. C. S. Ayres makes a strong case against early operation in moderate degrees of squint. He believes that glasses should be worn from one to four years before an operation is justifiable. He quotes the following case in support of his position:

"Boy, aged seven, convergent strabismus,—moderate degree of H. After he had worn the glasses a few months his eyes were parallel and continued so as long as he wore them, but as soon as he removed them the squint returned. He saw perfectly in the distance with them and could study without discomfort. He wore the glasses seven years and then said he could not see in the distance with them. He was allowed to use them only for study. A year later he said he could not study *with* them, and this proved to be true, and he was allowed to take them off. His eyes were then perfectly parallel and he had no asthenopic symptoms. Nor has he had any since. A tenotomy in his case when first seen would certainly have been followed by a marked divergence. The glasses corrected the squint, but his H. remained the same. It certainly was not the H. alone which caused the squint. It was H. plus a want of innervation of the muscles. After the boy had grown and developed physically his ocular muscles no longer needed the aid which the glasses gave. Not all, and in fact not many children, will be able to take their glasses off at fifteen or sixteen, but if they will begin to wear glasses soon after the squint shows itself they can hope to correct it."

He advocates the prescribing of glasses as soon as the squint shows itself, and has given them to a child two years and two months old with good results. As there is always advancement of the ball after cutting the internal rectus, the author advocates operating on both internal recti so as to equalize the deformity.

Amblyopiatrics.—In the *Medical News*, December 31, 1892, Dr. Geo. M. Gould calls attention to the lack of a name for the therapeutics of amblyopia in the cases in which the defect is ascribed to "disuse" and coexisting either with squint, muscular insufficiency, or a high degree of ametropia and probably anisometropia. He has coined the word amblyopiatrics, and brings it forward to supply the deficiency. "For amblyopia from disuse" he suggests the term argamblyopia. He quotes from Fuchs and other authors who advocate the do-nothing policy in anisometropia, and demonstrates by cases taken from his own practice the error into which they have fallen.

Argamblyopic eyes can be functionalized by correcting the ametropia,

reinstating the muscular balance, if inbalance exists, and by exercise. Such eyes must be nursed and encouraged, and everything, no matter how infinitesimal it may appear, must be carefully done which will assist in securing the desired result. Frequent retestings will be necessary. The final success depends upon the patient's persistence, patience, and co-operation, as on him will depend the carrying out of the gymnastic exercises, without which little can be achieved.

Sympathetic Neuro-Retinitis, with Plastic Iritis; Recovery; Microscopic Examination of the Enucleated Eye. (*Archiv. Ophthalmol.*, vol. xxii., No. 1, 1893.)—Dr. T. Y. Sutphen reports an interesting case of a five months' old boy who received a penetrating wound of the right eye, two months before consultation. Slight inflammation resulted. A few days before he came under observation it was discovered that sight was wanting. On examination the eye was found blind, tension lowered, iris discolored and bulging, yellow reflex from the vitreous body and a sunken cicatrix at the ciliary border. There was some photophobia of the left eye, and though the media were clear there was definite neuro-retinitis. The following day the offending globe was removed and subjected to the most careful microscopic examination. No micro-organisms could be detected in the sections of the eye. The sympathetic irritation gradually subsided. The case serves to establish the fact that sympathetic inflammation of the nerve and iris may occur without migratory germs traceable with the means at our disposal thus far.

A Convenient Ophthalmoscope.—In the *Am. Jour. Ophthal.*, February, 1893, Dr. Lucien Howe describes this instrument, which consists of the two discs of a regular ophthalmoscope without a handle. The lens-holding disc has a slot reaching from its centre to periphery. The mirror-holding disc has a screw, which stands at the periphery. When the instrument is to be used, the lens disc held to its fellow disc by the screw is pushed so that the screw moves from the periphery end of the slot to the centre end. The lenses are then in position to rotate as desired before the usual peep-hole of the mirror. There are two adjuncts to the instrument,—one a cap to protect the lens disc, and the other is a common two-inch-focus lens, mounted so as to serve as a cap to the mirror side.

Muscular Asthenopia without Refractive Error.—In the *Milwaukee Medical Journal*, February, 1893, Dr. Belno A. Brown writes of this condition, which, he believes, is more common than generally supposed. He reports three cases in which vision was $\frac{20}{20}$, but difficulty in reading was experienced, with pain in the eyes and headache. In all, insufficiency of internal recti was found. Suitable prisms were prescribed and relief resulted in every case.

DISEASES OF THE LARYNX, NOSE, AND SURROUNDING STRUCTURES.

IN CHARGE OF J. PAYSON CLARK, M.D.,
Physician for Diseases of the Throat, Massachusetts General Hospital; Physician to the Throat Department, Boston Dispensary.

The Treatment of Non-Membranous Stenosis of the Larynx in the Adult by O'Dwyer's Method of Intubation, with Report of Five Cases. (*Medical Record*, April 15, 1893.) By W. K. Simpson, M.D.

This method of treatment does away with the two principal objections to former methods, namely, preliminary tracheotomy or laryngotomy, and the necessity of oft-repeated short attempts at dilatation. The larynx is tolerant of the constant pressure. Three of the cases reported were syphilitic. In one the larynx was occluded by a mass of granulations, in another there was general swelling of the mucous membrane, and in the third the lumen of the larynx was almost obliterated by indurated and swollen mucous membrane. Intubation increased the calibre of the larynx in these cases. Case IV. had paralysis of abduction of both cords. Case V. was a stenosis following fracture of the larynx. In both cases relief of dyspnœa was obtained. The former died twenty-four hours after first intubation, probably from heart-failure in a beginning pneumonia. The latter has been free from dyspnœa two years and a half since first intubation. The tube is of the same shape as that used in children, in three sizes, of hard rubber or metal. The technique of intubation in adults is in the main the same as in children. When extra force is required on account of the firmness of the tissue, and when the epiglottis cannot be easily controlled, the operation becomes more difficult. When the stricture is very small or away from the median line it may be well to try the introduction of the tube, using a mirror. As soon as the tube enters the stricture the mirror must be dropped and the forefinger placed on the head of the tube. The string should be left in until the breathing is easier and the operator feels reasonably sure there is no danger of the tube being occluded or coughed out. In removing the tube, it is preferable to do so with the aid of the laryngeal mirror.

A Foreign Body Impacted in the Larynx for Seventeen Months; Removed by Laryngo-Tracheotomy. (*Medical News*, March 25, 1893.) —Dr. J. F. Klinedinst reports the case of a farmer struck on the back of the neck by a falling limb of a tree. Part of a plate of false teeth went into the throat. The larger portion of this was coughed up a few days later. The symptoms of laryngeal irritation still persisting were thought to have been caused by the piece which had been coughed up. The patient's health began to fail, the voice was husky, and there was a constant cough. Six months after the accident he began to have fever, chills, night-

sweats, and muco-purulent expectoration, and became emaciated. A laryngeal examination revealed the missing piece of plate in the larynx. This piece was removed through an incision made through the thyro-cricoid membrane, the cricoid, and the first two tracheal rings. The removal of the growth by laryngeal forceps would have been impossible from its situation. The symptoms presented a striking resemblance to those of laryngeal phthisis. The remarkable tolerance by the larynx of so large a foreign body is interesting.

The Quality of Compressed Air for Sprays and Inhalations. (*Journal of Amer. Med. Association*, January 28, 1893.)—Dr. D. Lichty thinks it important that the air for these purposes should not come from near the floor in some dusty corner of the doctor's office. He gets the air for his compressed-air reservoir from out of doors, through a funnel-shaped chamber packed with asbestos wool.

The Etiology of Membranous Rhinitis (Rhinitis Fibrinosa). (*Med. News*, May 13, 1893.)—Dr. A. C. Abbott reports three cases of this affection. In the first case, numerous colonies of bacillus diphtheriæ were found, which, when inoculated into guinea-pigs, caused their death with the characteristic pathological lesions. This case was lost sight of before the history was complete. The two other cases occurred in two children in the same family. The membrane in one case was so adherent that profuse epistaxis was caused by removing it. The membrane disappeared in both cases under treatment. There was no sore throat in any case. In the older of the two children last mentioned, being the one first attacked, the bacteriological examination showed the Klebs-Loeffler bacillus in large numbers. While the cultures from the younger child were morphologically and biologically identical with the Loeffler bacillus, they were found to possess a lower degree of virulence on guinea-pigs. This difference in virulence was interesting in view of the probable infection of one sister by the other. There was no marked constitutional disturbance in either of the two cases. These observations offer another argument in support of the opinion that the virulence of the bacillus diphtheriæ fluctuates in intensity, and that the virulent diphtheria bacillus and the so-called pseudo-diphtheria bacillus are one and the same organism. The difference of virulence of the Loeffler bacillus in this affection and in true diphtheria is interesting but confusing. The paper closes with a discussion of the bacteriology of this bacillus, its manner of growth in different media, and its change in appearance when transferred from one culture-medium to another.

Bacteria in Ozæna. (*Münchner Med. Wochensch.*, February 28, 1893.)—Abel has found in sixteen cases of atrophic rhinitis in the nasal secretion a bacillus similar to the Friedländer pneumo-bacillus. It is apparently identical with that described by Loewenberg, but by other observers falsely

identified with the pneumo-bacillus. The writer always found it in the secretions of ozæna, never in other nasal discharges, and therefore assumes that it is specific to ozæna. It does not appear to cause the fetor, but apparently changes the secretion, so that the putrefaction producers find a good soil in it.

The Use of Mirrors in Anterior Rhinoscopy. (*Münch. Med. Wochensch.*, March 7, 1893.)—Richard Wagner has found small mirrors useful in the examination of certain parts of the interior of the nose. For the vestibule, a mirror, such as is generally used in posterior rhinoscopy, is warmed and introduced along the floor of the nose opposite the vestibule. For examining the upper region of the atrium and anterior part of the roof of the nose, a mirror eight mm. in diameter is used. The nostril is slightly opened with the nasal speculum, and the mirror introduced along the floor opposite the part to be examined.

DERMATOLOGY.

IN CHARGE OF W. A. HARDAWAY, A.M., M.D.,
Professor of Skin Diseases in the Missouri Medical College, St. Louis.
ASSISTED BY
C. F. HERSMAN, A.M., M.D.,
St. Louis.

Lichenification of the Skin.—Brocq (*Gazette des Hôpitaux*) refers to the different meanings which have been attached to the term lichen by various dermatologists. The older English and French authors understood by this word a dermatosis characterized by papules discrete or confluent with more or less pruritus, and sometimes resulting in thickening of the skin and exaggeration of the natural folds. Hebra substituted instead of lichen agrius and prurigo mitis et formicans of the old writers his prurigo; while he considered the diseases known as lichen simplex, lichen circumscriptus, etc., as eczemas. Hebra and his school thus retain lichen for two types of disease, lichen scrofulosorum and lichen ruber in its various forms. Brocq thinks this simplification is too sweeping, and urges that the lichens, as described by the old authors, should be again studied. If the skin be constantly irritated, as by the nails or in other ways, a chronic inflammatory process is often set up, characterized by an infiltration, with thickening and roughening of the skin, while the papillæ hypertrophy, often in small areas so as to resemble papules. In time the skin loses its suppleness, and the normal markings become more evident, forming a checkerboard-like arrangement. This condition Brocq terms lichenification. If there were no dermatosis present before this change is produced, the affection is a primary lichenification; while if this process supervenes

from irritation of a pre-existing disease, it is a secondary lichenification. It is the first class to which Brocq calls special attention. In a broad way this primary lichen may be divided into two groups according as it is localized or generalized. The localized form occurs in variously-sized patches, usually fading gradually into the healthy skin. In such an area three zones may often be recognized. The outer zone is lightly pigmented and has a velvety appearance, due to papillary hypertrophy. The middle zone is formed of papules from a small to a large pin-head in size, of a pale- or brown-red, with their surfaces often presenting minute points closely packed together, which are the projections of the papillæ. When these papules are so closely set as to become confluent, the third zone is formed. The last condition forms the highest degree of the affection, and in it reddish or dusky plaques of infiltrated skin are formed, whose surfaces present the quadrangular markings mentioned above. The surface may be covered with furfuraceous scales or blood-crusts due to scratchings. This form is especially likely to occur in those of neurotic temperament.

The generalized lichenification is most commonly found following the traumatisms of scratching in general pruritus. The first morbid manifestations are minute shining papules scarcely raised above the surface of the skin, resembling an aborted lichen planus. If the pruritus now ceases the skin returns to its normal appearance; but should it continue the papillary hypertrophy becomes more marked, and the skin gets infiltrated and thickened; the surface is then marked off in small quadrilateral figures. Sometimes the affected skin is pale-red, at others grayish or pigmented. The eruption occurs in large plaques connected together by areas of skin less affected, so that large portions of the body may be involved, and the general effect be that of a lichenoid eczema.

Brocq thinks pruritus senilis is little likely to be followed by lichenification; while pruritus hiemalis shows a much stronger tendency in this direction. The author then proceeds to describe the process supervening upon some pre-existing dermatosis, and concludes with a general account of the remedial measures to be employed in the treatment of this condition of the skin.

A Case of Localized Idiopathic Atrophy of the Skin.—Taylor (*Jour. Cutaneous and Genito-Urinary Diseases*, March, 1893) refers to the scanty knowledge we have of idiopathic atrophy of the skin, and records this case: The patient was a woman, twenty-six years old, who had always enjoyed good health, and never had syphilis. The skin affection was accidentally noticed at the age of twenty-three, as a white spot behind the right ear. At the time the first examination was made, an irregularly oval patch of skin behind the ear was of a very white color, with a violet zone surrounding it; the affection was at first thought to be morphœa, but a careful examination with the finger failed to show any thickening of the affected skin; indeed, the skin was shown to be in a state of atrophy. A portion

of the affected area was excised, and the morbid process, which had been extending, ceased to advance, the violaceous border disappeared, and the white patch became stained by brownish pigment. Three years after the first appearance of the malady there remains a brown patch of slightly atrophied skin.

The author mentions several similar cases observed by different dermatologists. He adopts the classification of partial atrophy of the skin made by Vidal and Leloir: (*a*) Idiopathic partial atrophy; (*b*) Striæ atrophicæ; (*c*) Partial atrophy symptomatic of a central or peripheral lesion of the nervous system. The case reported belongs to the first class. A microscopical examination showed an atrophy of the skin with cystic degeneration of the hair follicles and sebaceous glands.

HYGIENE AND BACTERIOLOGY.

IN CHARGE OF A. C. ABBOTT, M.D.,
First Assistant in the Laboratory of Hygiene, University of Pennsylvania.

True Diphtheria, without the Formation of False Membranes, presenting the Appearance of a Simple Catarrhal Angina. (Echte Diphtherie ohne Membranbildung unter dem Bilde der einfachen katarrhalischen Angina. By E. Feer. *Correspondenz Bl. für Schwei. z. Aerzte.*, 1893, No. 8.)

In a ward in the Children's Hospital at Basle, in which there were a number of cases of diphtheria, there were found in three children virulent diphtheria bacilli. Two of these children were suffering from a condition that clinically was simple catarrhal angina, while the third showed no symptoms whatever of trouble in the throat, in fact, was well at the time. On two occasions bacilli having all the morphological and cultural peculiarities of the diphtheria bacillus were isolated. They were, however, without virulence.

[The abstractor has recently had a somewhat similar experience. Two sisters suffered from membranous rhinitis. They evidently represented an instance of direct infection from the one to the other. From one, cultures of the true virulent bacillus diphtheriæ were obtained, while from the other an organism in all respects identical, save for its power to kill guinea-pigs, was isolated. This latter bacillus did, however, possess sufficient disease producing power to cause local changes in the tissues at the seat of inoculation that were in all respects identical with the pathological lesions accompanying the activity of the true virulent bacillus diphtheriæ. This latter organism is usually known as the pseudo-diphtheria bacillus, a name to which the abstractor objects, for the weight of evidence points to its being the true Klebs-Löffler bacillus, which from unknown causes has had its pathogenic properties modified.]

Remarks upon the Question of Pollution of Rivers. (Bemerkungen zur Frage der Flussverunreinigung. By Frank. *Hygienische Rundschau*, May 15, 1893.)

Frank presents in compact form the results of many of the investigations that have been made upon this interesting and important subject. The length of the contribution and the character of its contents will not, however, permit of a brief extract. The value of the arguments can only be appreciated by reference to the original.

In conclusion, he states that the many efforts put forth by numerous municipalities, with the object of determining the influence of pollution of streams upon the health of the neighboring populace, have all given negative results. The conclusion drawn from the statistics is, however, false. The pollution of a river, he continues, with the sewerage of a city is throughout identical to the contamination of a well with the contents of a cess-pool. It may continue for years without necessarily causing disease among the drinkers of the water, but the results may become, and often are, quite different from this when the polluting agents come from the intestines of typhoid and cholera patients. Examples of this latter condition are too well known to require rehearsal here.

The opinion expressed by Virchow ten years ago, to the effect that sewerage should always be prevented from entering water-courses, is still the proper light in which to view this question, for the process of self-purification of polluted streams should not be relied upon too implicitly.

Transmission of Immunity against Rabies from the Father to the Child. (Die Vererbung der Immunität gegen Rabies von dem Vater auf das Kind. By Tizzoni and Centanni. *Centralblatt für Bact. u. Parasitenkunde*, 1893, No. 3.)

The hereditary transmission of acquired immunity from parents to offspring has been viewed from two stand-points: First, a transmission brought about through the agency of the spermatozoa of the father or through the ovaries of the mother; and, second, a protection that is afforded to the fœtus in utero through absorption of the vaccine that had been introduced into the tissues of the mother, or a protection afforded to the newly born through the milk of the vaccinated mother.

The experiments of Tizzoni and Centanni bore more particularly upon the former hypothesis. These experiments were made upon rabbits, and resulted in the following conclusions:

1. That it is possible for the father who has been immunified against rabies to transmit this immunity through his semen to his offspring.

2. That the mother apparently takes no part in the process, for the semen of the immunified father was capable of producing constant results with different non-vaccinated mothers.

3. That the inherited immunity is common to all the offspring of a litter.

4. That the immunity inherited by the young is of a lower degree than that possessed by the father.

5. That the immunity afforded through the semen is more permanent than that which has been observed to be afforded by the blood or milk of immunified animals.

PATHOLOGY.

IN CHARGE OF ALLEN J. SMITH, A.M., M.D.,

Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas.

The Histology of the Inflammatory Process. (Ueber die Histologie der Entzundungsvorgänge. *Berliner klinische Wochenschrift*, No. 26, 1892.) By Dr. E. O. Shakespeare, Philadelphia.—In a recent number of the same journal (No. 6, 1892) P. Grawitz, of Greifswald, published an article upon the structure of connective tissue and its relation to the histology of inflammation. He states that although the connective tissues have been recognized for a number of years, there does not seem to have been any knowledge that between the evident cellular elements there exist other cells; and that because of ignorance of any other possible source the cellular formation in inflammation has been necessarily referred either to proliferation of the evident connective-tissue cells, or to the invasion of the inflamed part by the white cells of the blood. Besides these sources, however, he then indicates that there exists another possibility, "a very important, and in many chronic inflammations (*endoarteritis deformans*) the only source of cell formation,—namely, the formation of cells from the intercellular substance." The author describes the existence in tendons, besides the ordinary well-known fixed connective-tissue cells, of three other forms of cells, which are only to be made out by special examination and preparation, which in normal conditions lie dormant between the tendon elements (*schlummerzellen*), but which under the influence of irritation grow, and play an important rôle not only in inflammatory processes and in processes of enlargement, but also in atrophic changes. Similar arrangements are described in the other forms of connective tissue.

Dr. Shakespeare is somewhat gratified to have a former statement of his own so fully corroborated by Professor Grawitz, but cannot refrain from claiming priority, his article descriptive of the same subject having appeared in the *Medical News*, of Philadelphia, in 1882 (Nos. 18–20). Herein he prefaces his discussion of the processes of inflammation by a consideration of the normal anatomy of the connective tissues in which it is commonly studied. In the cornea, for example, he distinctly indicates the existence, besides the recognized cell elements (the lymph, or wandering cell, and the branched corneal corpuscle), of two other forms of cells, endothelial cells in more or less complete plates lining the lamellæ of the cornea, and also

covering the larger bundles of fibres, and small, flat cells enveloping the primary bundles (the small bundles which together form the large ones). To these last the name "dormant cells" is applied by Shakespeare, just as by Grawitz. Moreover, the American writer states that upon the action of irritants the endothelial cells and the minute dormant cells show active signs of participation, growing so as to become easily visible, and that, in mild degrees of the inflammation, without the appearance anywhere of the colorless cells of the blood from the corneal margin. He describes similar arrangements in hyaline cartilage, in the tunica intima of the blood-vessels and elsewhere; and insists that in the inflammatory process the round cell infiltrate is not necessarily the product either of the proliferation of the visible connective-tissue elements or of the wandered-out white blood-corpuscles, but of the growth of the minute cells (dormant cells) which occupy the position of intercellular substance. About the only marked difference in the conclusions of these two authors is that Grawitz denies the possibility of the participation of the white blood-cells in the connective-tissue processes in inflammation, while Shakespeare does not thus exclude them, although he believes they are not a necessary factor.

CLIMATOLOGY.

IN CHARGE OF GUY HINSDALE, M.D.,
Lecturer on Climatology in the University of Pennsylvania, Philadelphia.

Intermittent Fever in Southwest Africa. (*Medical Record*, January 7, 1893.)—Dr. L. L. Von Wedekind, U.S.N., records five cases of fever occurring in United States sailors who landed at St. Paul de Loando, West Africa, on December 7. The men went into the interior from one hundred to one hundred and twenty-five miles, lived in huts, ate ship's provisions, and for a time drank ship's water. They were out in the heat of the day and frequently at night, sometimes while hunting had no overhead covering all night long, and occasionally, when hunting hippopotami, waded up to the hips through swamps. There were no symptoms until the twenty-first day, when intermittent fever developed. The first stage was not recognizable, excepting as headache and languor; no history of chill or even chilly sensation could be obtained. They simply reported, "Doctor, I think I have the fever," and the thermometer would register 105°, 106°, 107° F., as the case might be.

"The temperature reached its height about the middle of the second stage, judging this stage to have begun when the patient first noticed his being abnormally hot. This period would last about five hours, the height of the temperature being reached about the end of the second hour. Following this each case exhibited a slight perspiration, but really little more

than a moisture of the skin. The headache during the fever was severe, and delirium present in one case. All were of the tertian type, and in two apyrexia during the interval was complete, while in the rest fever was present to a greater or less degree until convalescence was established. Each case answered rapidly to medication, and after three attacks was convalescent.

"As far as I was able to ascertain from the medical gentlemen at St. Paul, the continued action of a malarial poison upon the system does not blunt its susceptibility to fresh attacks, as each man, woman, and child is affected three, four, or five times annually, and each attack is destitute of anything new, and as equally rich in having lost nothing of the first attack."

REVIEW OF ITALIAN, SPANISH, AND PORTUGUESE MEDICINE.

IN CHARGE OF A. M. FERNANDEZ DE YBARRA, M.D.,
New York,

Corresponding Member of the Medico-Chirurgical Academy of Madrid, Spain, the Argentine Medical Circle of Buenos Ayres, South America, and the Society for Clinical Studies, of Havana, Cuba.

Our Present Knowledge of the Etiology and Pathology of Dysentery. (*Rivista internazionale d'igiene*, Naples, September and October, 1892.) By Wesener.

The author recognizes three kinds of dysentery,—mechanical, toxic, and parasitic.

Mechanical Dysentery.—In this class are included all intestinal inflammations directly produced by irritant contents of the bowels. Heubner, and before him the old medical writers, attributed the production of the great majority of cases of dysentery to mechanical causes; but since the true understanding of such terms as miasm, contagion, etc., that theory has been gradually losing ground, and at present it is admitted only that the irritant contents of the intestines are a secondary cause in the development of the disease.

Toxic Dysentery.—It is a long time ago since the idea that certain noxious substances are generated in the intestines, and aided by undigested food in the bowels give rise to dysentery, was first propounded. The resemblance of dysenteric ulcerations to gangrenous sloughs induced Kelsch and Kiener to admit the possibility of dysentery being produced by the action of a caustic and violent poison on the intestinal mucous membrane. To satisfy themselves on this point, they injected a nine-per-cent. solution of ammonia into the rectum of dogs; from a slight intramucous hemorrhage to necrosis and sloughing, very much like those of dysentery, were thus induced, and they arrived at the conclusion that the toxic agent secreted by the bacteria found in that disease sets up a corrosive action similar to that produced by

ammonia. Rochefontaine in 1884 demonstrated that when the pure liquid stool of dysentery is injected under the skin, it creates a very intense phlogistic action, and that it is almost inactive when diluted with a small quantity of water. He tried in vain to reproduce the disease in dogs by means of rectal injections of dysenteric stools. It cannot yet be said whether irritant chemical substances can produce dysentery in man or not, in the clinical sense of the term, as we understand it is the case in sporadic tropical dysentery. Probably the presence of irritating chemical substances constitutes a predisposing cause of the disease, by rendering the intestinal tract propitious to the microbian invasion; they certainly can give rise to the formation of intestinal ulcers.

Parasitic Dysentery.—This subject, the author claims, ought to be studied under two separate headings: (*a*) when the disease is brought on by bacteria; and (*b*) when it is caused by amœbæ. In the first case, as far back as 1869 Basch showed the presence of micro-organisms on the surface of the mucous and submucous membranes of the intestines of persons who had died of dysentery, although he could not make out the exact shape of those parasites. The author also refers to the researches of Rajeusky, Brumer, Ziegler, Petrone, Besser, Babés, Schœfer, and Klebs on the subject. In 1888, Cornil, in the name of Chantemesse and Widal, presented a communication to the Academy of Medicine of Paris, setting forth the result of their observations on the autopsy of several victims of dysentery, who had contracted the disease either in Tonquin, Cayenne, or Senegal. They found a special bacillus, rounded at its extremities and with a slightly greater thickness at the middle, which was colored by aniline dyes and did not liquefy gelatin; injected into animals through the mouth, it gave rise to intestinal ulcerations, in which the self-same bacillus was found. The most recent article on the subject is that of Ogata (1892), who made a thorough study of the different forms of dysentery existing in Japan. He was unable to detect any amœbæ in the stools, but found several very fine bacilli resembling the bacillus tuberculosus. The subcutaneous injection, and particularly that through the rectum, gave rise to intestinal ulcerations and acute inflammation of the bowels, followed by death, to the animals which served for the experiments. Ogata also found small miliary colonies in the liver and spleen. Weillon and Jayle recognized in an hepatic abscess, consequent to an attack of dysentery, the bacillus coli communis in large quantity.

Amœbic Dysentery.—Lambl, in 1860, discovered amœbæ for the first time in the intestines of children who had died of enteritis. Cunningham detected them in the dejections of cholera patients. Lœsch was the first to call attention to the presence of amœbæ in dysentery. He had noticed a considerable number of them in the stools of a patient suffering from profuse diarrhœa, and at the autopsy discovered in the intestines ulcerations and old cicatrices due, probably, to a former attack of dysentery. Injected into a dog through the mouth and the rectum, these amœbæ reproduced themselves in considerable masses, and caused intestinal ulcerations. Cunningham,

however, asserts that he has found free and encapsulated amœbæ in healthy persons, and also in the intestines of horses and cows; he does not, therefore, consider them pathogenic. Koch, when he went on his famous mission to Egypt, found in five cases of dysentery, the last one already on the road to recovery, four times amœboid corpuscles from one and a half to two times the size of leucocytes. Immediately after the publication of this news Kartulis went to Alexandria, where he recognized in the fecal discharge of dysenteric patients the same amœboid elements described by Lœsch; he injected them into several animals, unsuccessfully; he tried to obtain cultures with them, also without success; he found amœbæ likewise in the hepatic abscesses of patients suffering from dysentery. Klava, after fruitlessly searching for microbes, detected the amœbæ in sixty consecutive cases of dysentery. In 1878, Grassi ascertained that the amœba coli exerts no pathogenic action whatever, and that it exists in healthy persons in all Italy and the southern part of France; he found it in widely-different diseases, such as typhus, cholera, pellagra, colitis, as a consequence of a tumor, in diarrhœa *ab ingestis*, etc. Dock does not attribute to amœbæ any pathogenic action either. Councilman and Laffleur in fifteen cases of tropical dysentery found in fourteen the amœba coli in the fæces, the hepatic abscess, etc., and their description of this wandering cell agrees with that of Kartulis; their conclusion is that the amœba coli is the true cause of the dysentery of tropical countries.

The *endemic dysentery of warm climates* is probably generated by animal parasites, is not contagious, and sometimes also found in temperate regions. The amœba seems to be the principal factor in its causation, and the pathological changes produced are most likely due, in part at least, to the bacteria developed *in situ* or transported there by the wandering amœbæ. The direct pathogenic action of these corpuscles has not yet been satisfactorily established.

In *sporadic dysentery* we cannot therefore completely cast aside the mechanical causes in the etiology of the disease, as, for instance, compression due to an impaction of fecal or toxic matter in the intestines. The schizomycetes co-operate with the pathological process by swarming into the already altered tissue. What the species of those micro-organisms is we do not know, but they are certainly not the same which produce epidemic dysentery.

FORENSIC MEDICINE.

IN CHARGE OF LORENZO D. BULETTE,
Of the Philadelphia Bar.

LEGAL RESPONSIBILITY OF A HOSPITAL PHYSICIAN FOR INJURIOUS TREATMENT OF PATIENTS DUE TO NEGLIGENCE OF NURSES IN FOLLOWING HIS PRESCRIPTIONS.

THE increasing number of actions for damages by patients, either against hospitals or the physicians thereof, or both, for alleged injurious treatment therein, and the growing disposition thus manifested to suffer no lapse on the part of such practitioners from the strict legal requirements of the rule prescribing the degree of professional cure and skill to which all patients are entitled, has caused frequent inquiries as to the extent of the legal duty, and the consequent liability, of a hospital physician to the patients under his charge. The inquiry is the more pressing and causes the more anxiety to the practitioner in view of the fact that he is compelled, owing to the number of patients, to leave many details of his prescriptions for their treatment to nurses employed by the hospital. And the matter is thus further complicated by the question as to whether the nurse, of whose service the physician thus avails himself, becomes, for the time being, his agent in carrying out his directions for the treatment of a particular patient so as to make the physician responsible to such patient for injuries arising from the nurse's negligence, just as he would be responsible for the negligence of a student or another physician whom he placed in charge of a patient in his private practice, according to the settled doctrine that he who does an act by another does it himself.

It is unnecessary, for the purposes of this paper, to discuss the question as to whether the relation that subsists between a physician, who volunteers to give a portion of his time to patients in a hospital, and the hospital is that of master and servant; and also, whether under any circumstances that relation can be said to exist between such physician and the hospital nurse whom he instructs to carry out his treatment of a patient in his absence. Indeed, the adjudicated cases are not harmonious in determining the character of the relation in these instances, so as to ascertain the person on whom the responsibility rests; the most, perhaps, that can be said is that each case must depend largely upon its own peculiar facts.

It was decided, however, in a well-considered case,[1] that a hospital

[1] Perionowsky *vs.* Freeman, 4 F. & F. 977.

physician is not liable for the negligence of nurses in carrying out his directions for the treatment of a patient in the hospital, unless he was present and could have prevented it; and also that such patients are not entitled to more than the usual and ordinary degree of care and attention at the hands of physicians connected with the hospital into which they have been received for medical or surgical treatment. The action in this case was against two hospital surgeons for damages for their negligence in the treatment of a patient, whereby the latter was "wrongfully placed and immersed and forcibly held in a bath heated to an excessively and improperly high temperature, and for an excessive and improper length of time, whereby the plaintiff, the patient, was severely scalded, wounded, and injured." And the negligence thus alleged was denied by the two surgeons.

From the evidence produced at the trial, it appeared, according to the plaintiff's testimony, that the surgeons of the hospital, where the plaintiff was received for medical treatment, not only ordered the bath but were present and personally directed it; and that he was actually forced into and kept in a steam hip-bath in which the water was so hot that it severely scalded him.

The testimony produced in behalf of the defendants showed that they, having ordered two of the hospital nurses to give the patient a hot hip-bath, went on to attend other patients in the same ward and were not present when he was put into it; and, when they returned a quarter of an hour afterwards, they found him upon the bed. There was no doubt at the time that he was somewhat scalded, although it was said that the extent of the injury was greatly exaggerated. But however great the injury, the defendants contended that they were not liable therefor, inasmuch as it was caused by the negligence of the nurses. And, indeed, besides himself, the plaintiff produced only one witness who was present on the occasion, and he could not, when pressed on cross-examination, positively state that the surgeons had returned before the man was out of his bath; and the only medical witness called for the plaintiff, who was asked a question as to the duty of surgeons on such occasions, stated that it was no part of a surgeon's duty, when a hot bath was administered, to be present to test its heat, but that this was a matter ordinarily left in the hands of nurses.

The case for the plaintiff, however, as sworn to by himself and his witness, was that he screamed out and struggled with the nurses when he found the water was too hot, and that they held him down, and that the medical men who were in the ward must have heard his screams. The defence in substance was that it was practically impossible that surgeons should personally attend to such matters; their patients were far too numerous and their duties too onerous to admit of their discharging the duties of nurses in addition to their own. The two surgeons were called to testify in their own defence, and they stated positively that they were not present when the man was put into his bath, but that they had gone on to attend other patients in the same ward, and that they heard no sound of screaming or struggling,

nor heard any complaint from the man when they came back to him. And in this they were confirmed by two medical students who were with them. Their directions, they said, were that the water should be as hot as the patient could comfortably bear, but it was not necessary that it should be very hot. The man was not, in fact, to sit in the hot water, but over it, for the sake of the hot vapor. They both positively swore that the man made no complaint of scalding, and that there were no appearances of it at the time; nor did they see or hear anything of the suffering or screaming which the plaintiff had described in his evidence. However, a few days afterwards, upon hearing something about scalding, one of them examined the patient and found that he was scalded, but up to that time he had made no complaint. They stated that there were two hundred surgical and one hundred and fifty medical patients in the hospital, and that there were four surgeons, each of whom had about fifty patients to attend to. There was a record kept of the cases in a book in the hospital. There were two nurses engaged in the case, who put the man in the hip-bath. The surgeons had no control over the nurses as to appointment or dismissal, which rested with the board of trustees of the hospital. When complaint was made, this action was brought, instead of the matter being sent to be inquired into by the board as the defendants desired.

In addition to the testimony of defendants themselves, two very eminent surgeons, one of whom had examined the plaintiff, also testified in their behalf, stating that it was no part of the duties of hospital surgeons to be present on such occasions, or see to the temperature of the water; that this was part of the familiar knowledge of the nurses; and that it was the usual hospital practice for physicians to give their directions that patients were to have hot baths, and leave it to nurses to see to the baths. Both these witnesses, in answer to the Lord Chief Justice, said that when hospital surgeons had ordered a patient to be given a hot bath there was nothing at all inconsistent with the proper discharge of their duties that they should go on and attend to other patients; this was the usual hospital practice, it being practically impossible, owing to the number of patients, that they should pursue any other course; and that a surgeon no more knew what was the fit temperature of hot water for a bath than a nurse who was necessarily quite familiar with it. This was all the evidence produced; the nurses were not called by either the plaintiff or the defendants.

It was observed by the court that, inasmuch as the usual hospital practice in regard to hot baths and the like was as here proved, and, as a person who became a patient in a hospital could expect no more than the usual and ordinary degree of care and attention, "this action would not be maintainable merely for the negligence of the nurses. The only question would be whether the defendants were liable, by reason of their personal presence on the occasion, which they denied. The sole point, therefore, for determination was whether they were personally present when the man was put into the bath."

Chief Justice Cockburn, in commenting on the case presented by this evidence, in his charge to the jury, said, "Our great hospitals, supported as they are entirely by alms and voluntary subscriptions, could not be supported if they had to engage a staff of medical men sufficient to attend to all the minor incidents or details of medical or surgical operations, which might be ordered, such as baths. It is indispensable that such matters should be left to nurses, who are necessarily familiar with them; and it has been satisfactorily proved by the testimony of some of the most eminent medical attendants of our hospitals that such is the ordinary and usual course of hospital practice. That being so, the only question is, whether the defendants were present when the man was put into the bath, or were near enough to observe what occurred, which it was probable was greatly exaggerated. It is well known that medical men are always anxious that no unnecessary pain should be inflicted upon their patients; and it is incredible that they should have permitted the man to be treated in their presence as has been described by him. This would be to impute to them a gross and senseless inhumanity which passes all bounds and limits of probability. The defendants are not liable for the negligence of the nurses unless they were near enough to be aware of it and to prevent it. And, although the plaintiff may have sustained some injury, still a verdict must not be given against the defendants unless they are personally responsible for it; moreover, the statement of the plaintiff on that point was not corroborated, but was distinctly contradicted. No doubt persons who go as patients into hospitals are not to be treated with negligence; but, on the other hand, physicians who give their services gratuitously are not to be made liable for negligence for which they are not personally responsible."

Upon the evidence and the charge of the court instructing them in the law applicable thereto, as here presented, the jury returned a verdict for the defendants.

The Supreme Judicial Court of Massachusetts, in a recent case,[1] also held that a physician was not liable for the negligence of nurses in a hospital into which he recommended a patient to seek admission in order to be in a more favorable situation for the performance by him of two surgical operations which he had previously advised, and for the after-treatment therefor; and it was immaterial that the patient supposed it to be such physician's private hospital, inasmuch as neither he nor any one acting for him ever made any representations to that effect.

[1] Baker *vs.* Wentworth, 29 N. E. Rep. 580 (1891).

WELLCOME LIBRARY INSTITUTE

BOOK REVIEWS.

An Introduction to the Study of Diseases of the Skin. By H. Pye-Smith, M.D., Physician to the Department of Cutaneous Diseases in Guy's Hospital, London. 12mo volume, 407 pages, with twenty-eight illustrations. Philadelphia: Lea Brothers & Co., 1893.

The book is an excellent one, and we commend it to all interested in the subject. It is written by one entirely familiar with skin-diseases, both from the stand-point of the specialist and the general practitioner. The work, or a part of it, was originally prepared for Dr. Fagge's admirable "Practice of Medicine," and has been revised for its issue in this form, so that the subject-matter is up to date. It is written in an easy and attractive style, showing familiarity with the whole field of general medicine as well as the particular diseases described, which is in striking contrast to the contents of the average hand-book, from which, as a rule, the reader learns but little.

The style of the author, and the book as a whole, recalls the hand-book on the same subject by Hillier, published many years ago. Dr. Pye-Smith is favorably known as one of the eminent physicians to Guy's Hospital, and we have no hesitation in saying that he has written an original and valuable hand-book of skin-diseases, sound and practical in all its bearings.

Diseases of the Eye. A Practical Treatise for Students of Ophthalmology. By George A. Berry, M.B., F.R.C.S. Edin., Ophthalmic Surgeon Edinburgh Royal Dispensary, Lecturer on Ophthalmology Royal College of Surgeons, Edinburgh. Second Edition, revised and enlarged, with Colored Illustrations from Original Drawings. In one octavo volume of 745 pages, with 197 illustrations, 87 of which are beautifully colored. Cloth, $8. Philadelphia: Lea Brothers & Co., 1893.

In the second edition the author has adhered to the original outline of his work, while the additions will, to a certain extent, enhance the value of the book as a work of reference. Whether the departure in having colored plates adds to the value of the text is rather problematical. It is after the plan adopted by the earlier writers of this century; but they surpassed the work of to-day from the fact that the colorings were done on copper plates and were in consequence "truer to nature." After all is said and done, the student must learn disease from the patient; he must be brought in contact with it; he must handle it, touch it, and almost feel it.

The book is divided into eighteen chapters, dealing first with objective examinations of the eyelids, then with the external tunics of the eyeball proper, and in sequence with the iris, lens, and interior tunics of the fundus oculi.

In the treatment suggested for the various diseases, our author rather leans to the German method, which is always simple, and the pharmacopœia limited.

That part of the work dealing with the pathology of diseases is comprehensive and up to date, it also adds much to the value of the book. Chapter XV., "Errors of Refraction and Accommodation," is "over the heads" of students and general practitioners, but for one who has mastered Donders it must be refreshing to his mind to meet with so much mathematical matter so clearly defined. We agree with the author in that "Javal's optometer, though affording a simple and trustworthy means of calculating the amount of astigmatism, has the disadvantage of being expensive," a

consumer of time, and not always accurate. The chapter on operations is exceptionally well written and forcible; it shows more of the English line of work than any other part of the book. Among the various operations described for correcting trichiasis, the favorite among the Moorfields surgeons, *Burow*, is omitted.

In describing the incision for cataract operations, Mr. Berry says that "the cut should be made with as little sawing as possible." The operator who follows the "sawing movement" is deficient in a very important part of the necessary knowledge of the technique of his armataria.

The book will be read with profit and will find a place in the library of the greater number of American ophthalmologists; but it is nevertheless with a certain amount of humility we note the fact that out of the many American ophthalmologists who should have had recognition in such a work—and now that a second edition is brought out by an American firm the omission is very noticeable—but three names appear in a list of two hundred and forty-four foreign references.

THE DISEASES OF THE NERVOUS SYSTEM. By Dr. Ludwig Hirt. Translated, with Permission of the Author, by August Hoch, M.D., assisted by Frank R. Smith, A.M. (Cantab.), M.D., with an Introduction by Wm. Osler, M.D., F.R.C.P. New York: D. Appleton & Co., 1893.

We can only praise this book. It possesses the rare merit of originality. It is evidently the result of long labor and ripe experience. The classification of diseases is to a certain extent novel but justifiable. As an example, locomotor ataxia is placed among the diseases of the general nervous system instead of being discussed with diseases of the spinal cord. This is, as Osler says in the introduction, a distinct step in advance. Where all is so good, it is unnecessary, indeed impossible, to pick out any special subject for review. The style of the translation is easy and Germanisms have been carefully avoided. The illustrations are good, the general appearance of the book neat. It deserves and will assuredly attain a large sale.

NOTICE.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

THE Third Annual Meeting of the American Electro-Therapeutic Association will be held in Chicago, September 12, 13, and 14, at Apollo Hall, Central Music Hall Block.

Members of the medical profession interested in Electro-Therapeutics are cordially invited to attend.

AUGUSTIN H. GOELET,
President.

MARGARET A. CLEAVES,
Secretary.